



ACCESS AND UTILISATION OF PRIMARY HEALTH CARE SERVICES IN RIYADH PROVINCE, KINGDOM OF SAUDI ARABIA

Ghadah Ahmad Alfaqeeh

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**ACCESS AND UTILISATION OF PRIMARY HEALTH CARE
SERVICES IN RIYADH PROVINCE, KINGDOM OF SAUDI
ARABIA**

Ghadah Ahmad Alfaqeeh

**A thesis submitted to the University of Bedfordshire, in fulfillment
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ABSTRACT

The Kingdom of Saudi Arabia (KSA) faces an increasing chronic disease burden. Despite the increase in numbers of primary health care centres (PHCCs) current evidence from the KSA, which is limited overall, suggests that access and utilisation of PHCCs, which are key to providing early intervention services, remain unequal with its rural populations having the poorest access and utilisation of PHCCs and health outcomes. There is a dearth (lack) of information from the KSA on the barriers and facilitators affecting access and utilisation of primary health care services (PHCS) and therefore this study aimed to examine the factors influencing the access and utilisation of primary health care centre (PHCC) in urban and rural areas of Riyadh province of the KSA.

The behavioural model of health services use (Andersen's model) provided the contextual and individual characteristics and predisposing, enabling and need factors which assist with an understanding of the barriers and facilitators to access and utilisation of PHCCs in Riyadh province. A mixed methods approach was used to answer the research questions and meet the objectives of the study.

The converged qualitative and quantitative findings show that there are a number of predisposing (socio-demographic characteristics; language and communication and cultural competency) enabling barriers such as; distance from PHCCs to the rural residence, lack of services, new services, staff shortages, lack of training, PHC infrastructure, and poor equipment. Facilitators: service provider behaviour/communication, free PHCS, service provision and improvements, primary health care (PHC) infrastructure, manpower, opening hours, waiting time, and segregated spaces and need (increasing prevalence of chronic diseases, PHC developments in the KSA) factors influencing access and utilisation of PHCS.

This study highlights important new knowledge on the barriers and facilitators to access and utilisation of PHCS in Riyadh province in the KSA. The findings have some important policy and planning implications for the MOH in the KSA. Specifically, the findings suggest: the need for clear documentation/guidance on minimum standards against which the PHCS can be measured; an audit of service availability at the PHCCs, regular patient satisfaction evaluations of PHCS, that the MOH take a parallel approach and continue to resource and improve buildings and equipment in existing PHCCs, the recruiting of more GPs, nurses,

pharmacists, nutritionists and physiotherapists to meet patient demand and more Saudi health care staff, more targeted health education and interventions for the prevention of chronic diseases in the KSA and the need for an appointment system for attending the PHCCs.

There is a need for further research into the barriers and enablers to accessing and utilising health care in Riyadh and the KSA overall. This research would be made easier with a clearer definition of rural and urban in the KSA context which would allow a greater comparability between urban and rural PHCS for future research, audit and evaluation as well as comparison with PHCS in other parts of the world. The Andersen model provided a useful conceptual model to frame this research and provided a structure for contrasting and comparing the findings with other studies that have used the Andersen model to understand the barriers and enablers to accessing and utilising health care services.

DECLARATION

I declare that this thesis is my own unaided work. It is being submitted for the degree of Doctor of Philosophy at the University of Bedfordshire. It has not been submitted before any degree or examination in any other university.

Ghadah Alfaqeeh

24 June 2015

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

In The Name of Allah

I dedicate this work to

Baba Ahmad Alfaqeeh and Mama Zahwah Althawaib

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LIST OF ABBREVIATIONS

WHO	World Health Organisation
MOH	Ministry of Health
KSA	Kingdom of Saudi Arabia
HCS	Health Care Services
PHCCs	Primary Health Care Centres
PHCC	Primary Health Care Centre
PHC	Primary Health Care
MDG	Millennium Development Goal
PHCS	Primary Health Care Services
HSR	Health Services Research
USA	United State of America
GDP	Gross Domestic Product
GNI	The Gross National Income
GCC	Gulf Cooperation Council
MOP	Ministry of Planning
MOD	Ministry of Defence and Aviation
MONG	Ministry of National Guard
MOI	Ministry of Interior
OECD	Organisation for Economic Co-operation and Development
HBM	Health Belief Model

TRA	Theory of Reasoned Action
TPB	Theory of Planned Behaviour
GP	General Practitioner
SES	Socio-Economic Status
MSA	Modern Standard Arabic
UK	United Kingdom
IHR	Institute for Health Research
MOP	Ministry of Planning
MOI	Ministry of Interior
MSA	Modern Standard Arabic
CAL	Classical Arabic Language
NHS	National Health Service
OECD	Organisation for Economic Co-operation and Development
UOB	University of Bedfordshire

Chapter 1: Introduction

1.1 Introduction

The World Health Organisation (WHO) constitution state that, “the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition” (WHO, 2006). The Ministry of Health (MOH) in the Kingdom of Saudi Arabia (KSA) was established in the 1950s and the first development plan of the country was issued in 1971, since then massive developments in health care have occurred. During the past few decades, the government of KSA has given a high priority to health care services (HCS) which resulted in the improvement of health outcomes (Almalki *et al.*, 2011a). However, the health care system is still facing many challenges, such as shortages of Saudi health professionals, limited financial resources, poor accessibility to some health care facilities, lack of a national health information system, and the under-utilisation of the electronic health strategies (Almalki *et al.*, 2011a).

HCS in the KSA are provided at three levels: primary, secondary and tertiary. The primary health care centres (PHCCs) provide primary care services including preventive and curative services, while cases that require more advanced care are referred to public hospitals and those that need more complex levels of care are referred to central or specialised hospitals. One of the key strategies of the Saudi MOH for preventive health is the primary health care (PHC) approach for which a ministerial decree was issued in 1980 to establish PHCCs all over the country. The

aim of these PHCCs was on prevention and control of the most prevalent health problems through health education, providing adequate and safe water and basic sanitation, improving food supply through proper nutrition, providing comprehensive maternal and child health care, immunising children against major communicable diseases, prevention and control of locally endemic diseases, proper treatment of common diseases and injuries and providing essential drugs (Al-Nozha *et al.*, 2004; Al-Mazrou *et al.*, 1990). There is no official documentation on how the location of the PHCCs in the KSA was established but personal communication with policy makers highlighted that location of the PHCCs is based on population density (personal communication with staff at (MOH, 2013)¹.

Recently, there has been growing interest in the geographic distribution of public health services as countries strive to meet the Millennium Development Goal (MDG) of reducing health inequality (Sachs and McArthur, 2005; Travis *et al.*, 2004). One of the core health issues faced by developing and middle-income countries, such as KSA, is the health inequality between rural and urban areas (Almalki *et al.*, 2011a). In the KSA it has been reported that the poor health standards and health the outcomes of deprived rural regions continues to

¹ This information is based on personal communication with staff at the MOH. The findings from interviews with MOH policy makers highlighted more details on the criteria used for locating the PHCCs. This information is discussed further in Chapter five section 5.4.2

undermine national efforts to meet the MDG (Almalki *et al.*, 2011a). This problem has increased in complexity because of rapid urbanisation and mass migration from rural to urban regions. The rising level of income in urban areas has also widened the socio-economic gap, resulting in the health inequality issue being exacerbated (Almalki *et al.*, 2011a). Generally, access and utilisation of health care is poorer in rural than in urban areas leading to poorer outcomes in the former areas (Wakerman *et al.*, 2008; Hartley *et al.*, 1994). Health inequalities between rural and urban areas are a consequence of several factors which have been discussed in terms of barriers and facilitators to access and can be grouped into health related factors (water, sanitation, housing, transport, access to PHC) and non-health related factors (gender, education, income, employment, technology and insurance). Research driven by understanding the interdependencies between the health related and non-health related factors and the consequences of this on health outcomes continues to be carried out (Ramani and Mavalankar, 2006; Stevens *et al.*, 2006; Andersen and Newman, 2005). Specifically, attention has been directed toward differences in population health, public health, environmental health, and the variation in urban and rural health behaviours (Hartley, 2004; Jegasothy, 1999; O'Donoghue, 1999; Todd, 1996). By utilising a framework that examines the wider determinants of health, researchers can identify environment specific factors that may contribute to inequalities between for urban and rural residents (Farmer *et al.*, 2006; Arcury *et al.*, 2005; Buor, 2004). Currently the focus on the environmental and social determinants of health care was increased as a result of the rapid rise of urban populations globally (Jegasothy, 1999). This phenomenon led to a significant policy shift particularly

in urban areas while rural areas in reality were fallen behind. The problem is more severe in developing countries and middle-income countries such as KSA, in which the low level of education and the socio-cultural barriers are some of the reasons for declining accessibility to health care (Almalki *et al.*, 2011a).

According to the WHO, KSA ranked tenth globally in terms of the level of health and twenty-sixth regarding the overall health system performance. However, the country was the seventieth in terms of distribution of health indicating a high level of health distribution inequality (WHO, 2000). Ensuring equality of health distribution in KSA is particularly important owing to the high percentage of rural populations (and nomadic), as well as their vast geographical distribution. For a country that attracts a high international rating for its health system (WHO, 2000) redressing the gap in health outcomes presents a significant challenge. An understanding of the barriers and facilitators for accessing PHC in rural and urban areas in the Riyadh province provides an opportunity for devising interventions that create practical access to suitable, adequately resourced, sustainable models of PHC in rural areas where health outcomes are unacceptable.

In order to improve access and utilisation, a holistic strategy needs to be developed in the KSA that includes all stakeholders and considers all influencing factors, health and non-health related (Almalki *et al.*, 2011a). Since these factors and their orientation are unique to each country, the organisation of health care delivery health strategy adopted should also be context specific (Andersen, 2008).

In order to achieve these goals, it is therefore necessary to study the specific factors influencing access and utilisation of the HCS in the KSA.

There is compelling international evidence of the strong relationship between primary care provision and improved health outcomes (Davies *et al.*, 2006; Starfield *et al.*, 2005; McDonald and Hare, 2004; Gulliford *et al.*, 2004; Macinko *et al.*, 2003; Shi and Starfield, 2001). PHC is cost-effective and its focus on prevention and promotion is increasingly relevant to the upward trend in chronic diseases and their precursors (Humphreys *et al.*, 2008). It has a vital role in enhancing the effectiveness of the overall health care system, especially in the context of rural populations, for whom it is impossible for the government to provide full-scale HCF. It is therefore important to understand the access and primary health care services (PHCS) in rural and urban areas of Riyadh province of KSA.

1.2 Rationale

One of the core aims of the MDGs is to provide all people throughout the world with equal, unbiased access and ensure measures are in place to enable utilisation to basic HCS. Evidence from around the world shows that PHC is a fundamental channel to deliver these HCS (Davies *et al.*, 2006; Starfield *et al.*, 2005; McDonald and Hare, 2004; Gulliford *et al.*, 2004; Macinko *et al.*, 2003; Shi and Starfield, 2001).

The impact of globalisation and the fact that many developing and middle-income countries are progressing through the demographic and epidemiological transition has resulted in a rise in chronic diseases (whilst fewer people are dying in childhood from infectious diseases) (Yusuf *et al.*, 2001). Chronic conditions such as the prevalence diabetes, hypertension, heart diseases, cancer, and genetic blood disorders and obesity are increasing at an alarming rates and consequently tackling the rising chronic disease burden is currently a central agenda for policy makers when addressing changes to HCS (Yach *et al.*, 2004). Specifically, related to diabetes, Shaw *et al.*, (2010) highlight that between 2010 and 2030 there will be a 69% rise in the number of adults with diabetes in developing countries (and 20% increase in developed countries) resulting in the associated cost to national health care systems (Zhang *et al.*, 2010). Whiting *et al.*, (2011) highlights that the highest regional prevalence of chronic diseases for 2011, (after age standardisation to the world population), was for the Middle East and North African region.

The KSA is one such middle Eastern country with an increasing chronic disease burden (Almalki *et al.*, 2011a) which is resulting in increasing health costs to the MOH (Al-Qurashi *et al.*, 2008). Evidence shows for example that the prevalence of type 2 diabetes, hypertension and coronary artery disease have worsened since the 1980s (Al-Daghri *et al.*, 2011) with high annual costs for treatment. For example, the annual cost of treatment for diabetes mellitus was estimated as seven billion Saudi Riyals (US\$ 1.87 billion) in 2007 (Almalki *et al.*, 2011a). The existing evidence base (the majority of which is based on evidence from the developed world) shows that early intervention has proven to be an effective

strategy for reducing the incidence of chronic diseases, and difficulties, including the costs, associated with treatment of such diseases at the later stages of the conditions (Beaglehole *et al.*, 2008; Kahn *et al.*, 2008).

Despite the increase in numbers of PHCS in KSA, current evidence from KSA (which is limited overall) suggests that access and utilisation to PHCS, are key to providing early intervention services, remain unequal with its rural (and nomadic) populations having the poorest access and utilisation of PHCS (Almalki *et al.*, 2011a). Rural (and nomadic) populations are also the most deprived groups within the KSA population (Al-Yousuf *et al.*, 2002; Qureshi *et al.*, 1996). By understanding the barriers and facilitators to accessing and utilising PHCS in rural and urban areas in Riyadh province, KSA, this study will make a contribution towards reducing inequalities.

Most of the research on access and utilisation of PHCS has focussed on patients. In the KSA there is no study that has ascertained the views of MOH policy makers and service providers on planning and policy developments and barriers and facilitators to patients accessing and utilising PHCS.

The findings of this study will inform KSA policy makers and help develop strategies for potential planning and strategic improvements in PHCS with the aim to reduce inequalities in access to PHCS and better management of the increasing chronic disease burden in the KSA. More appropriate prevention strategies will

also provide a more efficient use of resources and reduce longer term health inequalities in the KSA population.

1.3 Research questions, aim and objectives

Research questions:

- *Research question 1:* how have PHCS evolved in KSA from 2008-2013 and what are the views of the MOH policy makers and service providers on the barriers and facilitators to patients accessing and utilising PHCS in Riyadh province KSA?
- *Research question 2:* what are the barriers and facilitators encountered by patients in rural and urban areas when accessing and utilising PHCS in Riyadh province, KSA?

Aim:

To examine the barriers and facilitators that influences the access and utilisation of PHCS in urban and rural areas of Riyadh province of the KSA.

Objectives:

- Review of the evolution of PHCS in rural and urban areas of Riyadh province 2008-2013;
- Ascertain the perspectives of MOH policy makers and service providers on recent policy and planning developments in PHC and the barriers and

facilitators to access and utilisation of PHCS in rural and urban areas of Riyadh province;

- Understanding patients views on the barriers and facilitators from the accessing and utilising PHCS in rural and urban areas of Riyadh province.

1.4 Outline of the thesis

This thesis is comprised of nine chapters as follows:

Chapter 1: above presented the introduction to the study and set the context and discussed the rationale for carrying out a study to examine the factors influencing the access and utilisation of PHCS in urban and rural areas of Riyadh province of the KSA.

Chapter 2: presents a review of the evolution of PHCS in rural and urban areas of Riyadh province 2008-2013 and spends time discussing the decision to use population density and socio-economic status (SES) to identify/define rural and urban populations in this study. Chapter 2 answers objective two of the study and is presented early in the structure of the thesis (as opposed to the more traditional approach of placing it after the methodology) as it also provides essential context for the study design.

Chapter 3: discusses the conceptual foundations of the study starting with a discussion of the way in which definitions and use of access and utilisation have evolved over time in health services research and use for this study. It then looks at the theories and models that have been offered as way of understanding access

and utilisation to HCS and presents an argument for going with Andersen's model to conceptually frame and drive this study.

Chapter 4: turns its attention to the methodology (mixed methods approach with a pragmatic philosophical approach) and the methods used for meeting the research objectives. A qualitative approach (one-to-one interviews with MOH policy makers and service providers) was used to meet objective 1 and 2 and a quantitative approach (patient questionnaire survey) was used to meet objective 3. Some important KSA context specific data collection experiences and their implication for research in gender-segregated societies are also outlined.

Chapters 5 and 6: offer the qualitative findings and quantitative results of the study respectively. Chapter 5 relies heavily on MOH policy makers and service provider narratives and chapter 6 presents descriptive data and correlations for the patient questionnaire responses.

Chapter 7: presents the converged qualitative findings and quantitative results. These converged findings are in relation to Andersen's predisposing, enabling and need factors.

Chapter 8: presents a thematic discussion of the qualitative findings and quantitative results and in doing so meets the objectives and answers the research questions. The discussion is presented in the context of the existing evidence on barriers and facilitators to access and utilisation of PHCS and shows how the findings from this study are similar or dissimilar to other studies. The final Chapter, Chapter 9 presents the study limitations, contribution to the field, policy implications and recommendations and ends with a conclusion.

1.5 Summary

Health inequality between urban and rural areas is the key challenge faced by health planners and policy makers, in reaching developmental goals. PHCS have a key role to play in providing access to HCS in rural areas. Hence, it is important to understand the barriers and facilitators that influence the access and utilisation of PHCS in rural and urban parts of Riyadh province. The outcomes of this study will help to improve the planning and delivery of PHCS in Riyadh province and more widely in the KSA.

Chapter 2: A review of the evolution of PHCS in rural and urban areas of Riyadh province 2008-2013

2.1 Introduction

This chapter turns its attention to presenting the context and detail of the health care system in the KSA. The KSA health care system is strongly influenced by Islamic teaching and KSA culture. There is however very little documented information available in the public domain on the evolution of the health care system in the KSA. The obtainable information is written and held by the MOH in the KSA who have produced a Health Statistical Year Book since 2008 to 2013 and a Strategic Plan of PHC in Saudi Arabia 2010-2020. These documents are available in the public domain and along with published papers and PhD research from the KSA form the basis of this chapter, which is intended to meet objective one: to review the evolution of the PHCS in rural and urban areas of Riyadh province 2008-2013. This chapter also presents discussion of the definition of urban-rural used in this study.

2.2 The KSA and the health care system

2.2.1 The KSA context

The KSA is a Middle Eastern country, which is bordered by the Arabian Gulf and the Red Sea, north of Yemen (see Figure 2.1). The land area is 1,960,582 Km² and comprises of thirteen provinces. The KSA economy is based on its oil reserves, which are the largest in the world. The petroleum sector generates approximately

75% of the budget revenues, 40% of Gross Domestic Product (GDP) and 90% of exports earnings. The Gross National Income (GNI) is \$US8460 per head classifies the KSA as a high middle-income nation (CDSI, 2013). The KSA total population in 2013 was 29,994,272 million with an annual growth rate of 2.7% of which the Saudi's were 20,271,058 with an annual growth rate of 2.15% considered as the largest and fastest growing population in the Gulf Cooperation Council (GCC). The KSA total population may reach 31.6 million by 2016, of which 22.8 million will be Saudi nationals (CDSI, 2013), Figure 2.2. The majority of the population in the KSA are urban dwellers (Littlewood and Yousuf, 2000). There has been an increasing shift of population from rural to urban areas of the KSA (Al-Hathloul and Mughal, 2004).

The KSA is ruled strictly in accordance with Shari'a law (or Islamic) and a consultative council of one hundred and fifty members, the Shura council (Majlis Al-Shura), is the official body, which devises policies and laws, which must be authorised by the King and the Council of Ministers before they can come into force (TSC, 2015). Shari'a law governs all aspects of KSA civil society including the KSA health care system, medical ethics (Johnson and Vriens, 2011), health and moral behaviour and gender dynamic e.g., laws prohibiting mixing with unrelated members of the opposite gender. (Aljaid, 2015; Halligan, 2006; Gallagher and Searle, 1985) argues that Saudi religion and culture exerts a powerful influence on KSA Government and health communication as well as KSA society. Specifically, the concepts of prohibition (*haram*), promotion (*Da'wah*), repentance and inclusiveness (*Tawbah*) and treatment and

rehabilitation (*Elaj*) for instance are central foundations within Islam and the Saudi culture and have an impact on the KSA health care system as well as health behaviour (see section 4.5.3 for further discussion on the role of Islam and Saudi culture on health behaviour).



Figure 2.1 Political Map of the KSA.

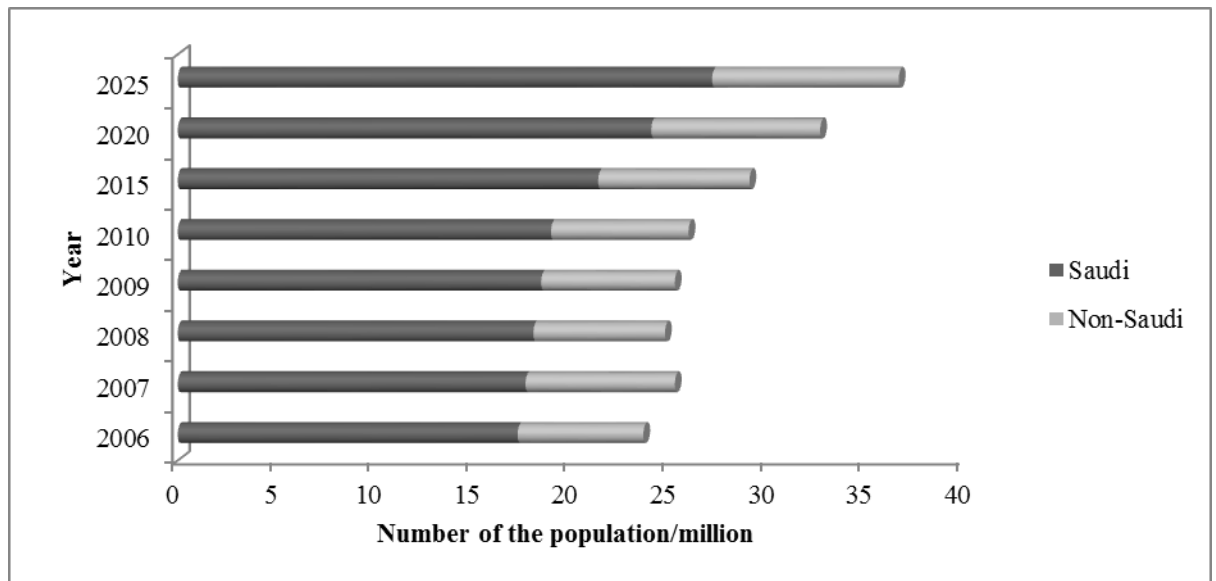


Figure 2.2 The KSA population (CDSI, 2013).

2.2.2 The KSA health care system: organisation and delivery

There is no accepted definition of a health system, as Bowling (2009) argues health systems are variously defined and specific to the structures that are used to deliver health care within different country contexts. As discussed above, the KSA health care system has developed within an Islamic religious framework (Littlewood and Yousuf, 2000) and the KSA health care sector provides health services for a rapidly growing population.

The KSA is a middle-income country (Binkhathlan *et al.*, 2008; Mina, 2007) and is in the early phases of the epidemiological transition (Al Ghobain *et al.*, 2011; Gaziano *et al.*, 2010; Al-Haqwi *et al.*, 2010; Motlagh *et al.*, 2009; Al Frayh *et al.*, 2001; Hijazi *et al.*, 2000). The health care system in the KSA has undergone significant developments particularly in primary care recognising the importance

of managing and preventing the increasing chronic disease burden (Khan *et al.*, 2012; Al-Daghri *et al.*, 2011; Khan *et al.*, 2010; Whiting *et al.*, 2011; Al-Nozha *et al.*, 2004; Al-Nuaim *et al.*, 1997). There is however a dearth of accessible health information/data and thus the sections below rely heavily on the Health Statistical Year Books (2008 to 2013) and the Strategic Plan of PHC in Saudi Arabia 2010-2020.

2.2.3 Health care development in the KSA

Reviewing the HCS in the KSA since its establishment in the 1950s indicates that overall there has been slow progress up until the late 1960s and to this date all planning was conducted solely by the MOH. By the 1970's, as the KSA underwent rapid development and socio-economic advancement, health care planning was devised collaboratively by the Ministry of Planning (MOP) and the MOH. Since then, a series of five-year development plans have been devised (Almalki *et al.*, 2011a). Table 2.1 below summarises the key objectives of the development plans for health care in the KSA.

Table 2.1 The development plans for the health care in the KSA (Mufti, 2000).

Plan	Objectives
1 st (1971-1975)	<p>The first two years were for the development of standard health services (upgrading health centres, implementing preventive health programmes, health culture and nutrition, staff development and opening hospitals and health centres.</p> <p>The other three years were for further development of health care facilities and on increasing the number of medical, technical and ancillary staff.</p>
2 nd (1975-1980)	<p>To increase geographical coverage to the entire country, develop preventive services, establish maternity centres network and standardise hospital design, as well as to develop mobile health services, which would enable desert dwellers and small communities to access health care.</p> <p>Planning dental clinics and specialist chest centres.</p> <p>Developing blood banks and introducing various administrative processes, such as health cards and medical files.</p> <p>The Council of Ministers provided private sector firms with loans to set up hospitals and private clinics.</p>
3 rd (1980-1985)	<p>The objectives were similar to the second one; to increase health care coverage and to further develop of HCCs and health activities.</p>
4 th (1985-1990)	<p>The core objective was strengthening the role of PHC as well as general development, increasing coordination between providers, and encouraging expansion of private sector based health services.</p>
5 th (1990-1995)	<p>To emphasise the PHC development and coverage, specifying that one PHCC per 10,000 population for cities with > 200,000 residents, one PHCC per 5000-6000 residents for cities with 200,000 residents and one PHCC per 2000 inhabitants for remote areas and villages.</p> <p>The plan also considered the development of health information systems as a key to increase HCS efficiency and effectiveness, as well as national manpower growth.</p>
6 th (1995-2000)	<p>Focused on strengthening PHC, referral processes, and the quality of health services, as well as eradication of infectious diseases.</p>

Since 1985, PHC has played an increasing role in the KSA health care service, addressing the issues of health care system management, optimising the usage of services and available resources, as well as encouraging the private sector to participate to a greater extent in financing the construction and management of HCF. The professional development of health personnel, including increasing the capacity of medical colleges was also addressed, as was the pivotal role of PHCCs in the provision of preventive and curative health care was emphasised. Information system development, quality of health services improvement and greater coordination and integration of health services were also key goals.

The Government has introduced initiatives to encourage the private sector to participate with the government in moving towards being regulator of the sector rather than being the direct provider of HCS. Privatisation is a politically sensitive issue for the KSA owing to the highly embedded culture of the welfare state. However (Almalki *et al.*, 2011a) describe a three stage plan to reduce the Kingdom's financial burden for health care by introducing legislation that forces private sector employers to provide health care cover for all employees, the public sector to do the same and for ultimate privatisation of state owned health facilities. The KSA allocated approximately SR 23.5 billion per annum in the health care sector, from 2005 to 2008, but a substantial increase was made during the following years, Table 2.2 (MOH, 2014).

Table 2.2 The MOH budget (in thousands of Saudi Riyals SR) and its relation with the total government budget (MOH, 2014)

Year	Government budget (SR)	MOH budget(SR)	% of the government budget
2007	3800000000	22808200	6.00
2008	4100000000	25220000	6.20
2009	4750000000	29518700	6.20
2010	5400000000	35063200	6.50
2011	5800000000	39860200	6.80
2012	6900000000	4776447	6.80
2013	8200000000	54350355	7.00
2014	8550000000	59985360	14.25

Table 2.2 above was obtained through personal communication with the MOH Financial Affairs General Department who provided the figures in Saudi Riyals (SR) for the KSA health budget for 2007-2014. There were no available figures for how this budget is broken down by province. The issues with obtaining information relating to the descriptive and financial developments in PHCCs in KSA are documents in (Appendix 1).

The KSA implemented a two-tier health service plan to ensure a network of health facilities exists. Tier-1 includes increasing the number of PHCCs and clinics established throughout the KSA. Table 2.3 below shows the annual increase of the number of PHCCs in the KSA. These PHCCs are intended to provide basic

services, for instance, emergency, prenatal, and preventive and the mobile clinics that serve remote rural areas (Almalki *et al.*, 2011a).

Table 2.3 The annual increase of the number of PHCCs, hospitals and hospital beds in Riyadh province, KSA (MOH, 2013).

Year	Number of PHCCs	Hospitals Number	Hospital beds Number
2008	363	42	6074
2009	373	44	6981
2010	399	44	7171
2011	401	45	7322
2012	435	46	7473
2013	435	47	7937

The PHCCs are supported by secondary care hospitals and specialist treatment clinics (Tier-2)², which are generally located in cities/urban areas. Hospitals belonging to the MOH provide essential HCS, and in some instances, specialist centres. The MOH facilities are increasingly exclusively available to Saudi

² In addition to the public PHCCs there are private PHCCs that provide specialist rather than holistic services. Comparing figures for private services also shows an increase in private clinics providing PHC facilities, hospitals and physicians (MOH, 2013). Since the focus of this study is PHCS this information is not provided.

nationals only; expatriates may only get specialist treatments at public sector hospitals, except in rural areas where there are no private facilities available. Hence the 5.5 million of expatriates, 50% of which reside in the cities of Riyadh and Jeddah, are increasingly forced to use private health care.

Despite the recorded increases of 363 PHCCs in 2008 to 435 PHCCs in 2013, there remains an overall shortage in the number of PHCCs, (hospitals and hospital beds) in Riyadh province, KSA to meet the needs of the population (MOH, 2013). This factor is common to all Gulf Cooperation Council (GCC) countries but the ratio of population to the number of PHCCs (hospital beds and trained medical staff) is most acute in the KSA (Albejaidi, 2010; Al-Ahmadi and Roland, 2005). The data on increased numbers of PHCCs demonstrates a MOH response to both the increasing demand for PHC.

The KSA health care budget for 2013, at SR 100 billion is a considerable increase and partly driven by the oil surpluses, but also political tensions as a consequence of the Arab Spring uprising; spending on education and health are intended to demonstrate social responsibility. This budget is used for HCS as well as for construction of 19 new hospitals and five medical cities (MOH, 2013). The budget also includes funding for another 155 PHCCs throughout the KSA, and data announced, regarding five of the new hospitals states that these will increase the number of beds available by 1300. The MOH also stated that new patient service programmes, such as a home medicine project, emergency services and clinical

referral services would be implemented. However, there were no specific actions to improve access in rural areas in either report (Carey *et al.*, 2013).

2.2.4 Key providers in KSA health care provision

The MOH and a number of semi-public organisations manage the health care sector in the KSA. The latter specifically operate hospitals and medical services for their employees. Private organisations increasingly participate in health care in the KSA. The Saudi health care sector structure is intended so as to provide a basic platform of HCS to all, with specialist treatment offered at some private and public hospitals. Almalki *et al.*, (2011a) report in the public health sector, the MOH is responsible for 62% of hospitals and 53% of clinics and centres, whilst the remainder are managed by government agencies. For instance, the Ministry of Defence and Aviation (MOD), the Ministry of National Guard (MONG), the Ministry of Interior (MOI), as well as by private firms, Figure 2.3. In the past outpatient treatments were provided by private sector organisations but increasingly, owing to the high demand and withdrawal of public sector health service availability for expatriates, inpatient treatments are also being supplied by the private sector (Almalki *et al.*, 2011a). It is worth noting at this point that Complementary and Alternative Medicine (CAM) is extensively used as a treatment option in the KSA. The positive attitude towards CAM is well noted in the literature (Elolemy and Albedah, 2012) and this does impact on the use of other health care services and treatments.

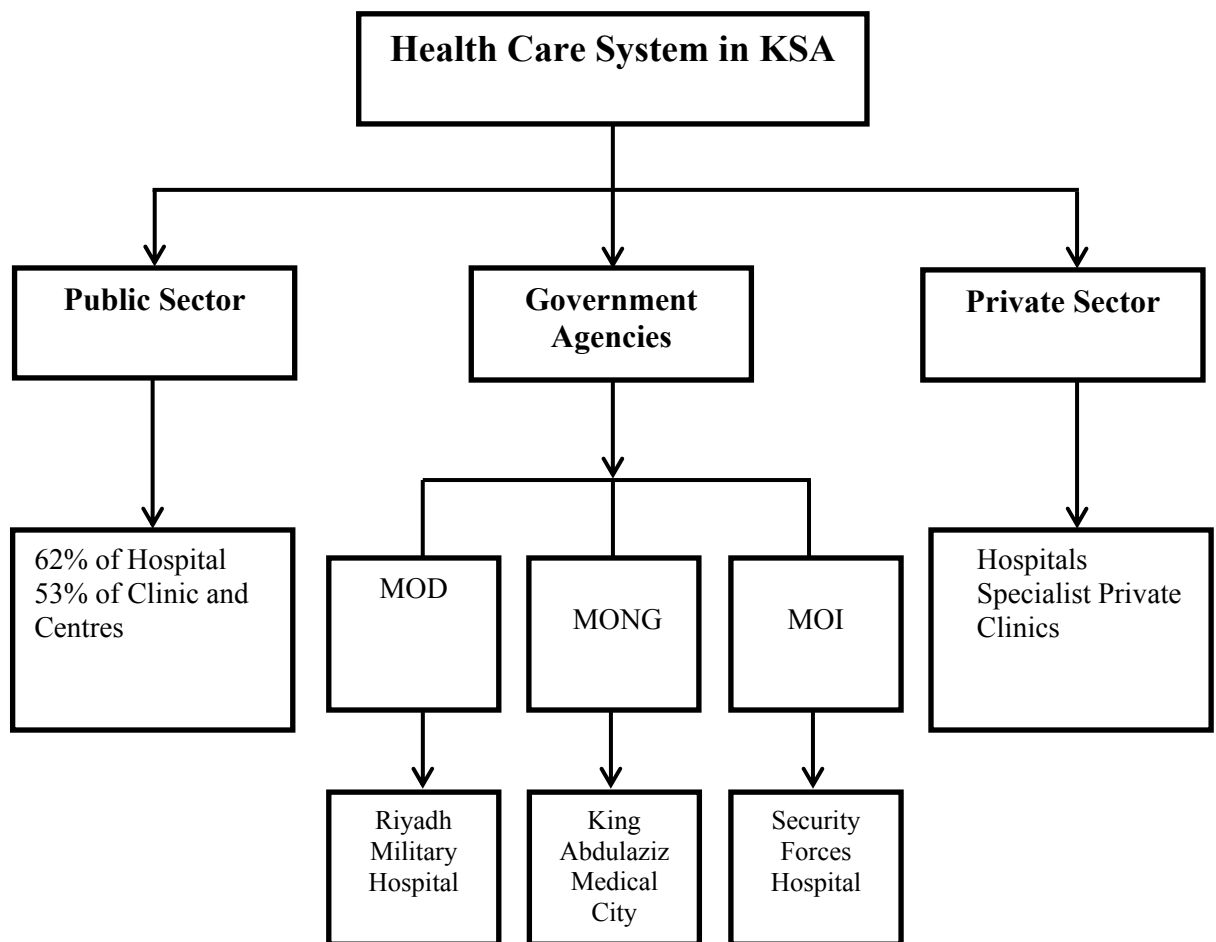


Figure 2.3 Health care sectors in KSA

The geographic distribution of PHCCs, Table 2.4 below illustrated that there were imbalances in the distribution of health care resources in the various provinces in the KSA.³ In Riyadh province, a total of 363 PHCCs provided PHCS, with at least one PHCC in each district. This data demonstrates the uneven distribution of resources in KSA with Riyadh province lagging behind some other provinces, which provide PHCS to a smaller population.

In addition, the Riyadh province has one of the lowest ratios of doctors and PHCCs to population, which may be a consequence of the rapid population growth. In contrast, provinces with relatively higher proportions of rural population, such as Qasim, Najran and Baha provinces have higher doctor and PHCCs to population ratios. The Southern Asir and Baha as well as the Qasim, Tabuk and Najran provinces, are all very rural in nature. This data implies that less socio-economically developed provinces, in which there are no major large cities, are not always associated with lower doctor to population ratios. The Jizan province has a high proportion of scattered population and a low doctor to population ratio, indicating potential problems in health service delivery and quality of care provided.

Table 2.4 Number and geographical distribution of PHCCs and GPs by province (MOH, 2008).

Province	PHCCs	GPs			Population
		Total	Saudi	Non-Saudi	
Riyadh	363	4924	1085	3839	6,084,965
Makkah	76	1713	386	1327	1,593,028
Madinah	135	1875	377	1498	1,67,731
Qasim	149	1849	148	1701	1,110,913
Eastern Province	129	1774	711	1063	2,285,756
Asir	253	1579	191	1388	1,618,757
Tabuk	62	850	28	822	773,080
Hail	89	717	21	696	569,230
Northern Border	42	609	15	594	301,201
Jizan	144	1318	150	1168	1,327,907
Najran	61	720	8	712	474,108
Baha	91	679	10	669	398,920
Jouf	30	546	28	518	260,518

Table 2.5 gives the number and geographical distribution of HCF in KSA in 2013.

The two tables (Table 2.4 and Table 2.5) show that in a period of five years from 2008 to 2013 the PHCCs in all of the KSA provinces have gone up. Riyadh province specifically has seen the largest increase in number of PHCCs (MOH, 2013).

Table 2.5 Number and geographical distribution of PHCCs and GPs by province (MOH, 2013).

Province	PHCCs	GPs			Population
		Total	Saudi	Non-Saudi	
Riyadh	435	6985	2114	4871	7,516,959
Makkah	92	2761	1010	1751	2,054,623
Madinah	154	2938	887	2051	1,962,558
Qasim	159	2258	255	2003	1,337,563
Eastern Province	136	3505	1808	1697	2,941,236
Asir	238	2286	583	1703	1,725,054
Tabuk	73	1247	71	1176	866,803
Hail	100	1084	32	1052	654,736
Northern Border	45	883	13	870	350,972
Jizan	155	2014	369	1645	1,497,377
Najran	65	1117	56	1061	555,129
Baha	101	1061	71	990	450,733
Jouf	35	783	30	753	321,388

2.2.5 PHCCs

The initiatives of PHCCs are health educations, prevention and control of health problems, supply adequate safe water and sanitation, promoting good nutritional habits and complementary food supply, maternity and child health care on an extensive basis, immunisation programmes for children, prevention/cure of common local diseases/injuries and essential drug provision (Almalki *et al.*, 2011a). The organisation of health care in the KSA is illustrated in Figure 2.4 adapted from (Al-Yousuf *et al.*, 2002). In the following three sub sections, the basis of classification of PHCCs in the KSA, the services provided, staffing and the basis for short listing ten PHCC for data collection are discussed.

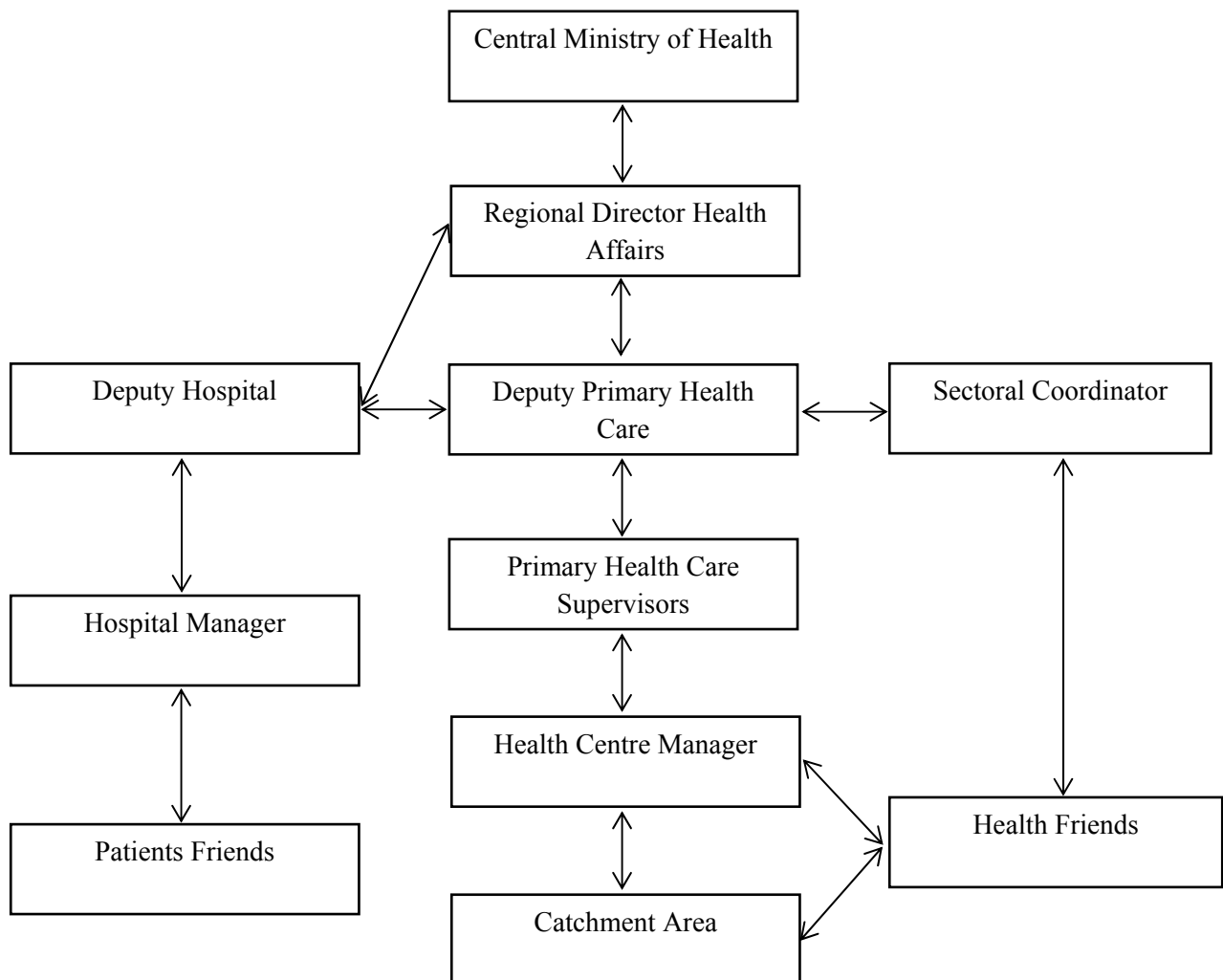


Figure 2.4 Organisation of PHCCs in relation to MOH hospitals in KSA (Al-Yousuf *et al.*, 2002).

2.2.6 Classification and services at PHCCs

In the KSA, PHCCs are mainly classified as M, A, B and C (Appendix 2). Those classified as M are referral centres provide the following services; laboratory, radiology and dentistry. These are further sub classified based on their location, population served and whether they offer residence to their staff as below. PHCCs

classified as A are centres in remote locations outside cities providing all the key PHCS and residence to their staff. Those classified as B do not offer radiology services and are further sub classified based on the total population served.

C centres are similar to B, but with bigger laboratory and designed for higher population density.

2.2.7 Manpower standards at PHCCs

Based on MOH classification discussed in the previous section, each type of PHCC has different staffing levels in various specialties. (Appendix 3) presents details of the type of manpower available according to the MOH PHCCs classifications. Manpower or health care workforce issues are a major challenge in the KSA. A large proportion of the KSA health care workforce is made up of non-Saudis and there is a high rates of turnover of this staff (MOH, 2013; Al-Homayan *et al.*, 2013; Almalki *et al.*, 2012; Almalki *et al.*, 2011b; Maben *et al.*, 2010). To reduce this shortfall and encourage and retain more Saudis in the health care workforce since the early 1960s, the KSA government has opened a number of medical colleges around the Kingdom and also offers MOH employees the opportunity to study abroad but despite this the Saudi workforce continues to be smaller than the expatriate health care workforce. One reason for this is that Saudi medical staff tend to migrate to Western countries to pursue their careers (Al-Pavan, 2013; Alkhazim, 2003).

2.3 Defining rural and urban

The existing evidence base highlights that there are inequalities in access and utilisation of HCS and consequently health outcomes between people living in rural and urban areas. One of the core limitations of initiatives regarding solutions to health inequalities and understating barriers and facilitators to accessing PHCS, which exist between urban and rural populations across different countries, is the diversity in the definitions attributed to populations living in urban or rural areas. Many nations, such as the KSA, have no well-defined distinction between urban and rural populations.

A review of the existing literature demonstrated this lack of consensus, for instance, (Teckle *et al.*, 2012; McMurray and Clendon, 2011) reported a lack of universally agreed definition and indicate that definitions vary, according to the context and purpose of the specific research study. This point is exemplified by descriptions of urban and rural in relation to geographical location (Hartley *et al.*, 1994), to population size and density, to accessibility to public services and to SES (Richards *et al.*, 2005). In order to understand the factors that affect accessibility to HCS by these different groups in the population, it is essential to identify the characteristics that distinguish between rural and urban. It was suggested by (Hewitt and Assessment, 1989), that rural health problems cannot be quantified, and informed policy decisions to address them and cannot be formulated without a well-defined description of what constitutes a rural population and where it is located. Therefore, a working definition of the terms urban and rural will result from reviewing the descriptions that do exist and

devising a suitable means of characterising rural and urban, which has significance for this study based in the KSA. In order to accomplish this, a variety of approaches that have been used to define urban and rural were considered, geographical location, population, SES and contextual.

2.3.1 Categorisation according to geographical location

Geographical location, as a criterion to distinguish between rural and urban populations, is well reported in the literature and has been used in health care research (Hartley *et al.*, 1994). Some studies used postcodes, in order to assess differences in health care accessibility and therefore to distinguish between factors associated with rural and urban areas (Lindsay *et al.*, 2006). This specific categorisation was conducted in developed nations in which areas are readily distinguished not only by postcode but also by other factors such as access to public services, income and availability of public institutions such as council houses (Lindsay *et al.*, 2006). Another study investigated the inter-regional/national differences, particularly in the areas of community development and international health (Hartley, 2004). However, this categorisation is only relevant to global level studies that focus on country level differences. Even in that case, homogeneity of other factors, which could affect such a categorisation, must be considered. A third group of studies focused on special cases, in which distinctions between rural and urban populations according to geographical location occur naturally or through political-economic interventions. A study conducted by (El-Sharif *et al.*, 2002) exemplified a special case; research into the relative risk of asthma in children located in refugee camps with those in the

neighbouring villages or cities. In those circumstances, the political-economic separation of families in refugee camps made it possible to use geographical location to distinguish between the terms rural and urban.

The main criticism of location-based categorisation is its over-simplicity and the lack of clarity. For example, the WHO defines rural as “*those areas, which are not urban in nature*”. However, the growth of cities and the rise of semi-urban areas, between the city suburbs and the countryside, mean that it is extremely difficult to determine a well-defined boundary between rural and urban areas and to describe their particular features based on geographical location. Consequently, despite the renewed interest in using geographical characteristics in health care studies, these are generally confined to special cases, in which the postcode can act as differentiator. The focus is on making inter-regional/national comparisons; differentiation exists naturally or through political-economic interventions.

2.3.2 Categorisation according to the population size and density

Population measures such as size and density have been used as a distinguishing factor, regarding rural and urban populations. An urban area is defined by the New Zealand Government as having 30,000 or more inhabitants (Statistics New Zealand, 2006) and by Australia as having a population >100,000 (McMurray and Clendon, 2011). The rationale for population measures, according to (O'Reilly *et al.*, 2007), is that population data are readily available and therefore the categorisation is based on convenience rather than on accuracy. Consequently population measures are a prime distinguishing factor in developed countries,

such as the USA (United States Census Bureau, 2010), Canada (Statistics Canada, 2007) and the UK (Office of National Statistics UK, 2004), as well as in some developing countries as India (Office of the Registrar General and Census Commissioner, 2001). However, the distinction between countries using population as the criteria for defining rural and urban areas is diverse. Further demonstrated by the Organisation for Economic Co-operation and Development (OECD), definition of rural are areas with population densities <150 inhabitants per Km^2 (United Nations, 2008), whereas the definitions employed in OECD member countries vary considerably. The USA describes urban areas as characterised by the territory, population and housing units, comprising of a population density of >1000 people per square mile and urban clusters surrounding those areas as having population density of >500 inhabitants per square mile; rural is all territory outside of those defined under urban areas and urban clusters (United States Census Bureau, 2010). Canada define urban as those consist of 1,000 or more inhabitants and with a density of 400 or more inhabitants per Km^2 (Statistics Canada, 2007). In UK, all built settlements with a minimum population of 1,000 and minimum land area of 20 hectares, as being urban; for consistency purposes, a 10,000 minimum population is defined as urban. Hence settlements of less than 10,000 inhabitants, together with all other land, are considered rural areas (Office of National Statistics UK, 2004).

Similarly, in developing countries with large populations, such as India and Pakistan, the criterion for differentiating between rural and urban areas is considerably different. In India's 2001 Census, urban was described as; all

constitutional locations comprising of a municipality, a corporation, cantonment board (civic administration agency) or notified town area committee. A location in which there is a minimum population of 5,000 in which 75% of all working males are engaged in non-agricultural work and there is a density of 400 people per Km² (Office of the Registrar General and Census Commissioner, 2001). Pakistan define urban areas in a similar manner, although prior to 1972, it used a combined definition of population size and administrative structures; an urban designation was appropriate if a location had a population of at least 5,000 inhabitants or if, regardless of its population, it possessed the constitutional administrative designations mentioned above. The contrast in definitions of rural and urban populations in developed and developing countries is evident, as is the fact that more complex processes exist in the latter.

The inconsistencies in definition, based on population, can be attributed to measures, such as density, being affected by the size of a country's land area. Therefore people aggregating in clusters, rather than being evenly distributed and as a consequence, the meaning of population density in the USA contrasts significantly with relatively overpopulated countries, for instance China or India. Such inconsistencies render it difficult to make accurate comparisons between different countries when investigating HCS in rural versus urban populations. For example, using population density as a measure to distinguish between rural and urban populations can lead to "misclassification of sparsely populated inner city areas" (O'Reilly *et al.*, 2007). Population density can also be modified by allowing for low density land set aside for uses of industrial, commercial, and retail uses, as

well as for parks and aspects such as land use regulations and cultural preferences. The most useful definitions of population density considered multi-dimensional factors, for instance that relative concentration of residential and commercial land use in an area or patterns of urban development (Galster *et al.*, 2001). Population density remains a widely used measure for categorising rural and urban areas; countries frequently define areas in this way since it ensures consistency among studies and accurate, reliable data is accessible. However categorisation in this way is merely of use for studies conducted within a specific country, not for multiple nations.

2.3.3 Categorisation according to SES

SES is frequently used as a base to distinguish rural from urban areas. It embraces factors such as income, employment levels and property ownership. The popularity of this type of classification relies on the assumption that life in urban areas is of a higher standard and markedly different than in rural areas which is often reflected in the relative health care provision. Although a much used socio-economic measure is the average of expenditure or consumption rather than income, is more rational and that data collection is easier and more reliable, particularly in rural settings (Filmer and Pritchett, 2001). A comparative study of Brazil and Ethiopia undertaken by Vyas and Kumaranayake (2006) reinforces this suggestion that the research examined indicators to differentiate the populations, such as fixed asset ownership, ranging from owning a radio to the source sanitation facilities or the type of flooring material used in households. As with population density, the scale and criteria for the socio-economic measure, varies

greatly amongst countries owing to relative differences in the SES of residents of urban and rural regions in specific countries. Rural inhabitants in the USA and UK are widely perceived to have a high quality of life (Richards *et al.*, 2005). For instance, Schnore (1963) suggested the people who lived in the suburbs outside cities have higher SES than those in the adjoining city. By contrast, in India and Pakistan, rural inhabitants are perceived to generally have considerably lower SES than those in urban areas. Standard scales for socio-economic deprivation exist and are frequently used, for instance, the Townsend Index and Carstairs Index (Erskine *et al.*, 2010) but these are not applicable to developing countries, since the income differences would mean that residents of some urban regions could be categorised as being rural. The number of inhabitants in rural areas is considerably higher than in developed nations, which is another notable difference (Lutz and KC, 2010). The assumption that all individuals comprising urban populations would be of higher SES, whereas all those in rural regions could have lower SES, is also flawed and exemplified by the fact that, in some developing nations, there are certain rural regions which are affluent, as a consequence of ownership of highly fertile land, for example. Economic change can also result in a significant decline in overall SES of large cities, which may then be classified as rural, if SES is the measure of comparison used. Psychological stressors which are prevalent at high levels in urban areas may impact on the density of cities and the diversity of their characteristics, possibly leading to increased gaps in SES (Geronimus, 2000). The findings from these studies infer that use of SES to categorise populations into rural and urban is also very complex.

2.3.4 Contextual categorisation

Context as a classification of urban and rural populations has been used frequently in academic studies. Accessibility to key public services is considered an appropriate indicator of urbanisation, particularly in developing countries. Studies conducted in the KSA have used contextual definitions to distinguish between the rural and urban areas, for instance (Al-Makaty *et al.*, 1994) investigated the use of Journalism and Media among Saudi rural and urban residents, and characterised them on the basis of their reliance on international or domestic media. When Garba (2004) investigated the management of urban development in the Riyadh region, he used access to public services and institutional structures as measures of urbanisation; the selection appropriately reflected the subject matter of public management. The examples indicate that contextual, self-developed definitions of terms rural and urban were used by these researchers, which raises doubts concerning the reliability and validity of the findings and their value to policy makers.

A critical review of approaches for the classification of urban and rural regions from the literature reveals that there is no universal approach to defining rural and urban. Criteria are selected on the basis of the country context and on the study aims. The use of SES or population measures has resulted in diverse definitions, which represent a challenge for researchers who need to compare rural and urban populations within and in a cross country context (McMurray and Clendon, 2011). These classifications using geographical location fail to consider the intrinsic differences between the populations and the complexity of population distribution

within an area, meaning that accurately defining boundaries between rural and urban populations is very difficult. In his study in the KSA (Al-Shahrani, 2004) assumed that people living in the main town were urban and the rest rural. Therefore the terms 'rural' and 'urban' are highly contextual and country specific as stated by McMurray and Clendon (2011), who affirmed the variation from country to country and, which the United Nations (2008) reinforce by highlighting national differences as the basis of the lack of a single, appropriate definition.

A report by the Department of Economic and Social affairs of the United Nations (2008) has proposed that countries define rural and urban as is appropriate to their context; this fact hinders researchers attempting to appraise comparable health care characteristics, and to understand the findings that emerge (Vlahov and Galea, 2002). Even research carried out within the same context, the KSA is difficult to compare (Al-Shahrani, 2004; Al Magrabi, 2001; Bakhawain, 1995; Al-Ribdi, 1990). Section 2.3.5 discusses definitions used in this thesis below in more detail because studies use different definitions of rural and urban. This point is discussed in further detail below. Therefore, in this study a working definition of the terms 'rural' and 'urban' in the context of the KSA is required, in order to understand the factors that affect HCS, particularly concerning the barriers and facilitators to accessing and utilising PHCS. This is discussed in more detail in the following section.

2.3.5 Defining urban and rural in the context of this research

As discussed in section 2.3 above the KSA, have no well-defined distinction between urban and rural populations. The only attempt to categorise the rural and urban population in context of the KSA was devised more than two decades ago, based on demographic profile specifically population size (Anqarī and El-Bushra, 1989). Anqarī and El-Bushra (1989) argue in their book ‘urban and rural profiles in Saudi Arabia’ that up until the 1950s the majority of the population in KSA lived in rural areas with only the cities of Madinah, Makkah, Jeddah and Riyadh were urban centres. The urban rural population demographics of the KSA have however changed dramatically since that period, primarily owing to its oil reserves, which have driven enormous social and economic changes within the country with the majority of the population living in urban areas. Consequently, a definition of rural and urban that is appropriate to the current rural-urban population demographics is required. Research carried out in the KSA has defined urban and rural populations variously, for example Al-Shahrani (2004) based his definition of rural and urban as rural areas are those that are situated some distance outside of the boundary of the urban areas. No typical characteristics or boundary of urban areas is presented. Al Magrabi (2001) distinguished between different PHCCs based on population distribution and population density. Bakhawain (1995) PHCCs located in old and new parts of the Jeddah city and Al-Ribdi (1990) looked at urban rural and desert areas. Selection of PHCCs based on PHCCs with typical characteristics of PHCCs in Riyadh province e.g. population characteristics, settlement patterns, levels of development in each area.

A multi-level definition of rural and urban was also difficult because data on the variables needed for a multi-level definition are either unavailable or not collected consistently in the KSA context. Thus after review of these definitions of urban and rural in the KSA and those from other countries available in the literature, population density was used to categorise urban and rural populations. It was not possible to use access to basic PHCS and SES because from the KSA perspective, the MOH provides standard services to all PHCCs irrespective of their location. A geographical classification was also not possible because there are no special geographical factors that apply to Riyadh and since the KSA is experiencing a shift from rural to urban areas, especially to find employment, resulting in an overlap in the socio-economic standards regarding income levels a socio-economic classification may be problematic.

The KSA has no official definition of rural and urban population, and given the significant overlap between the characteristics of urban and rural populations, it was difficult to categorise urban and rural population. Hence, it was decided to utilise relative population density to categorise rural and urban.

2.3.6 Association between the population density and the PHCCs

For the purpose of this study, Riyadh province was the target study site (see chapter 4 section 4.5.3 for a justification of the study site). Based on the population density described in the previous sections, urban and rural areas of Riyadh were identified and the five areas with the highest population density and the five with the lowest were selected. Five urban and five rural areas of Riyadh

province were selected because it was felt that these would meet the required sample size (see Chapter 4, section 4.5.3). Table 2.6 from the available data, it seems that there is no significant association between the number of PHCCs and the population density.

Table 2.6 Population density and the number of PHCCs in rural and urban areas in Riyadh province of KSA (MOH, 2012)

Governorate	Area/km ²	Population	Population density/km ²	PHCC	Rural/Urban
Alriyad	1800	5188286	2882.38	87	Urban
Al-Deriyya	2020	73668	36.47	1	
Al-Kharj	19790	376325	19.02	20	
Al-Zulfi	5540	69294	12.51	9	
Dharma	2060	24429	11.86	5	
Al-Hareeq	6790	14750	2.17	4	Rural
Wadi Al-Dawaser	48900	106152	2.17	14	
Rammah	15900	28055	1.76	6	
Al-Aflaj	54120	68201	1.26	12	
Al-Saleel	42420	36383	0.86	5	

2.4 Inequalities in health outcomes in the KSA

The Health Statistical Annual Book provided detailed statistics on the health status of the KSA population. The documents have evolved to include more and more detailed information over the years and the latest Health Statistics Annual Book provides more descriptive information on health status, health resources, public health and preventive medicine, health services and activities and health

services during Hajj season. Personal communication with the health statistics department (2013) highlighted that records prior to 2008 are kept in an unplanned manner and are not collated or available in the public domain. The latest Health Statistical Annual Book available is for 2013 and thus this section relies heavily on this. In addition to information from the MOH, other evidence is available to show the health status of the KSA population. The focus of much of this literature is on the rise in prevalence of chronic disease in the KSA (Khan *et al.*, 2012; Al-Daghri *et al.*, 2011; Alqurashi *et al.*, 2011; Khan *et al.*, 2010; Whiting *et al.*, 2011; Al-Nozha *et al.*, 2004; Al-Nuaim *et al.*, 1997).

2.5 Summary

This chapter has provided the context and detail of the health care system in the KSA. It has shown how the KSA health care system is influenced by Islam and the KSA culture and explored the development and geographical distribution of the PHCC in the KSA with a discussion of the growth and key characteristics of the PHCC MOH classifications. It then turned its attention to a discussion on the definition of urban and rural population used in this study, which was based on population density. The chapter ends with a discussion on inequalities in health outcomes in the KSA.

Chapter 3: Conceptualising access and utilisation of health care

3.1 Introduction

Chapter 2 has discussed developments in the health care system and the provision of PHCS in KSA (objective one). This chapter presents the conceptual framework for this research. It begins with a discussion on the development of definitions and theories of access and utilisation and highlights how it has been used in the context of this study. The literature on existing studies on access and utilisation is presented in relation to the factors related to patients accessing health care. These are framed according to the behavioural model of health services use (often referred to, as the Andersen model) which was used to develop the conceptual design for this study to understand access and utilisation of PHC in KSA. A justification for using the model and selecting the contextual and individual characteristics categories and omitting the health behaviour and outcomes categories were also discussed.

3.2 Understanding access and utilisation of HCS

Understanding access and utilisation of HCS is a central concern of health services research (HSR). The HSR³ field has emerged in response to concerns regarding disparities in access and utilisation of health care and providing good quality, affordable HCS. It is the complexity of health care systems that exacerbates the challenge of providing equitable HCS (Lohr and Steinwachs, 2002). Pescosolido and Kronenfeld (1995) look at the rise of sociology in the USA in the study of medical areas and in doing so, present a useful chronology of the way in which access and utilisation have emerged as important areas of investigation.⁴

They identify four main stages in the study of access to health care and during these stages; the definition of access and utilisation of health care has been variously defined and used.

³The definition of HSR research has evolved over time in response to developments in the field. In 2000 HSR was defined by the American Board of Directors of the Association for Health Services Research (AHSR) (now the Academy for Health Services Research and Health Policy) as ‘a multidisciplinary field of scientific investigation that studies how social factors, financing systems, organisational structures and processes, health technologies and personal behaviours affect access to health care, the quality and cost of health care, and ultimately our health and well-being (Lohr and Steinwachs, 2002). Lohr and Steinwachs (2002) also point out that HSR domains are focussed on family’s organisations, institutions, communities and populations.

⁴They argue that sociologists involved in the utilisation research now refer to themselves and health service researchers rather than medical sociologists (see Pescosolido and Kronenfeld 1995 page 10 for further detail).

- Stage one: this lasted from 1930-1955 and access was conceptualised as utilisation and studies focussed on individuals beliefs and the influence these have with traditional and modern health care systems. In this period, the focus was large-scale description of social institutions and community-based studies.
- Stage two: this period ran from 1955-1968 and was heavily influenced by Parsons' 1951 'sick role' where there were distinct roles played out by patients and physicians. The focus of research during this period was related to the use of physicians or not.
- Stage three: which occurred from the mid-1960s to the mid-1980s sees the development of models to understand access utilisation of health services particularly in response to debates about equality of care related to discussions about Medicare and Medicaid (Pescosolido and Kronenfeld, 1995). This period saw the development of the health belief model (HBM) (Rosenstock, 1966) and the behavioural model of health services use (also referred to as the Andersen model) (1968). This period also saw the establishment of the field of HSR and these models/theories became central to understanding health care utilisation at a policy level. Pescosolido and Kronenfeld (1995) argue that these models/theories 'organised the wide variety of contingencies laid out over the previous 20 years' (pg. 14). These models have undergone further developments over time. The developments of Andersen model are discussed in detail in

section 3.3.3 below. The Empirical studies during this period focused on national quantitative surveys.

- Stage four: the period from 1980 to present day sees a shift in direction where the concerns about utilisation of health care are replaced with cost of health care. Consequently, there was a refinement in Andersen model. This period also saw the development of new models such as the theory of reasoned action (TRA). Thus, up until the 1960s, access was conceptualised as utilisation and with the emergence of a clearer defined field of HSR, the focus of investigation shifts to access and utilisation. There is however, no clear definition of access and utilisation of HCS in the literature and both terms continue to have different interpretations and are often used interchangeably.

The definition of access and utilisation has therefore evolved over time. The term access is most frequently used in two ways.

- First, having access indicates that an individual can theoretically use a service; if required, that the service exists, that the service is available, and systems are in place which would encourage use of that service following a contact with it.
- Second, gaining access relates to the specific admission processes required to use the service; if access has been gained, then the service has been used.

Similarly, (Andersen *et al.*, 2002) described access to HCS as referring to two elements: the personal use of HCS, as well as any enabling factors or barriers to their use. Some researchers equate access with population characteristics, for example, family income, insurance and attitudes toward medical care and the delivery system, which includes the organisation and distribution of manpower and facilities (Stevens *et al.*, 2006; Freeman, 2006; Litaker *et al.*, 2005; Phillips *et al.*, 1998; Bindman *et al.*, 1995). The interpretation of the term by (Guagliardo *et al.*, 2004) denotes the stages and dimensions of care delivery, and suggests that the concept of access is understood more easily in these terms. Delivery was perceived to consist of two stages: the first referred to potential for delivery, relating to a needy population coexisting with a prepared, skilled health care delivery system; the second referred to as the realised stage, this is accomplished when all barriers to provision are overcome.

In general, access or lack of access is, according to Hall *et al.*, (2008) the subject of hypotheses in survey studies that focus on features of HCS, such as whether the individual's needs were met or not, how often the doctor was visited, the details of delay in getting treatment, whether standard or other types of care were supplied. In addition, if the study employs administrative data, access is often related to the rate to which hospital treatment is avoided as a consequence and/or ambulatory care, which refers to the use of outpatient treatments that are completed within a day (Hall *et al.*, 2008; Berman, 2000).

Access was considered to be one dimension of quality of care but, Hall *et al.*, (2008) believed that access was multi-faceted and proposed four dimensions of accessibility related directly health care:

- *Overall accessibility*: was regarded as the ability of a patient to register with a new provider.
- *Contact accessibility*: referred to a patient's ability to contact the provider using the telephone or by mail.
- *Appointment accessibility*: indicated the patient's ability to make an appointment to see the health care provider.
- *Geographic accessibility*: referred to the physical distance between health care provider and potential user in regard to travelling distance and time.

However, this definition focuses predominantly on service supply (access) whereas insufficient attention is given to the demand (utilisation), a factor that is significant in context of middle-income nations, such as the KSA. For example, in the KSA, the service provided is not appointed based but on demand, PHCS operate on a walk in basis (Al-Haqwi and Al-Shehri, 2007). It is unusual for Saudi patients to communicate with the medical practitioners on the telephone or by email and most communication occurs face to face (Al-Haqwi and Al-Shehri, 2007). The important barrier of religion and culture was not considered (Hall *et al.*, 2008) but this is significant in context of the KSA (Halligan, 2006). Provision of health care or any public service for that matter, in the KSA is culturally sensitive and hence culture has to be considered as a key aspect of any framework

related to provision of public service. The factors mentioned by (Hall *et al.*, 2008) do not generally apply to the KSA context in the public sector.

Research by Penchansky and Thomas (1981) suggested that access referred to the degree of fit between patients and the health system, they identified five dimensions regarded as particularly relevant to patient-service interaction.

- *Acceptability*: refers to the attitudes and beliefs that users and providers hold about the characteristics of each other.
- *Affordability*: is the cost to need factor, as the patient perceives it, direct and indirect cost but also opinion of the value received.
- *Availability*: refers to the balance between supply and perception of its adequacy; the volume and type of services (provision) and of needs (demand).
- *Physical accessibility*: related to the location of the service provided, in relation to that of the patient, which incorporates the mobility status of the patient, and therefore the geographical and physical barriers/facilitators.
- *Accommodation*: means the organisation of the service related to patient needs and the patient's perception of their appropriateness, for instance opening hours, appointment making and waiting time.

Penchansky and Thomas's (1981) conceptualisation of access identifies different dimensions of the patient-provider relationship (access and utilisation or supply and demand). It is not concerned with entry or service usage alone and it is therefore more useful in the KSA context and for this study. Other notable

contributions to the definition of access and utilisation have been made by Tanahashi (1978), Khan and Bhardwaj (1994), the Institute of Medicine (Millman, 1993), Gold (1998) and (Gross, 1972). These access theorists also (like Andersen) propose a component parts approach (i.e. predisposing, enabling and need factors) to understanding access and utilisation but describe these according to their theoretical priorities. Tanahashi (1978) for example, talks about the component parts of health service coverage to understanding access and utilisation to health care.⁵

Thus, access to HCS is a phrase used to describe the linkage between health care requirements, their supply and demand/usage, which usually differs with respect to rural and urban populations. This imbalance results from the relative lack of professional medical practitioners, the physical facilities, and the affordability of care for those individuals residing in rural areas (Aday and Andersen, 1974). Access is stated to describe the potential and actual entry of an individual or group into the health care system by (Aday and Andersen, 1981). This concept of access embraces various elements of the provider patient relationship (supply) which then determines usage patterns (demand). The availability of services is relatively easily measured using data, such as the number of doctors or hospital beds per

⁵Goldsmith provides a comprehensive discussion of access theories. For further detail see 'access to health care for disadvantaged individuals a qualitative inquiry. 2007.

1000 population. However this does not provide indication of the likely take up; it is the attitudes of the providers and/or the patients that determine usage, which can be based on the perceived accessibility and/or acceptability by either party (Cunningham *et al.*, 1998). The rates of usage of service provided are also proposed as an objective measure of accessibility (Chavkin and St Clair, 1990). However, this perspective has several limitations, when the services are used and the patient's condition improves the usage rate will decrease since it is no longer required to the same degree. The related decline in utilisation will be influenced by the effectiveness of the HCS available. In addition, the costs of providing the services impact on what is available, whereas the benefits relate to the results of using the services provided. The section below turns its attention to presenting the models of individual health behaviour and health care utilisation and offers a critical justification for using Andersen model to conceptually frame this study.

3.3 Models of individual health behaviour and health care utilisation

As discussed in section 3.2 HSR has relied heavily on models/frameworks and theories commonly used to understand help seeking, health behaviour and HCS access and utilisation. These have emerged in response to developments in sociology and psychology and have become key tools for understanding access and utilisation in the discipline of HSR. These models/frameworks and theories can be summarised under the following key approaches (McKinlay, 1972):

The economic approach: the rational choice model is an example of this approach and views help seeking as a rational weighing of costs and benefits by individuals. Key factors are the income, health insurance, cost of health service and free medical care.

The socio-demographic approach: service usage is patterned based on demographic variables such as age, gender, education and social class. The Andersen's model is an example, wherein the individual characteristics are situated within the context of health care system.

The socio-psychological approach: focuses on utilisation behaviour with respect to motivation, intention, perceptions, norms and beliefs. For example, HBM utilises the psychological and social characteristics to predict individual health seeking behaviour. The TRA and the theory of planned behaviour (TPB) propose that predictor of health behaviour are intentions, which in turn are determined by person's attitude towards the behaviour and person's perception of social norms towards the behaviour.

It has to be noted that these approaches are not mutually exclusive and a certain degree of overlap in help seeking behaviour may be found in each of these approaches; as a result of inter and multidisciplinary work within HCS research (Pescosolido and Kronenfeld, 1995). Both the HBM and Andersen's model have integrated interests of other disciplines to an extent and have emerged as models with strong explanatory power. They have also reconceptualised, for example,

Parson's 'sick role' concept firmly rooted in medical sociology and patient illness behaviour to explain population health belief, behaviour and utilisation of PHCS (Parsons, 1951). Hence 'sick role' concept struggles to provide an explanatory framework for understanding the behaviour of individuals with long term and permanent conditions such as chronic illness and disability (Arluke *et al.*, 1979; Segall, 1976; Kassebaum and Baumann, 1965) and health behaviour at a population level (Cohen *et al.*, 2000). Health behaviour and HCS utilisation models as applied to PHC mostly serve as a collection of relevant variables to be considered in research design. These models are adapted to the research question, aims and objectives. The data obtained using these models permit comparative evaluation of factors impacting health behaviour and HCS utilisation. As in this study, the principal objective was to identify problematic areas so that corrective interventions can be planned. The key concepts, constructs, strengths and weaknesses of leading models are discussed below, grouped under the approaches, which were briefly discussed in the previous page.

3.3.1 The economic approach

The rational choice framework grounded in rational choice theory has often been used for modelling social and economic behaviour (Blume and Easley, 2008) and has informed modelling of health behaviour (Pescosolido, 1992). It assumes decision making by an individual to be purposive to balance costs against benefits to arrive at action that maximises personal advantage. It is useful in examining the utilisation of specialised services in which costs and benefits are easier to identify (Lindenberg, 1985). While it is less powerful in understanding decision making

for general services as it lacks understanding of patient's motivation. The rational choice framework is sometimes considered to have informed both the HBM and Andersen's model of HCS utilisation from an economic psychology of rational choice perspective (Pescosolido, 1992).

3.3.2 The socio-psychological approach

The Theory of Reasoned Action (TRA) and Theory of Planned Behaviour (TPB)

The TRA was first introduced by (Fishbein, 1967) in an effort to understand the relationship between attitude and behaviour. It includes measures of attitudes and social normative perceptions that determine behavioural intention. The TPB is an extension of TRA and includes an additional construct concerned with perceived control over performance of the behaviour (Ajzen, 1991). The TRA assumes a casual chain linking behavioural beliefs and normative beliefs to behavioural intention and behaviour via attitude and subjective norms (Ajzen, 2011; Ajzen, 1991). It provides a very precise rationale for identifying and measuring behavioural and normative beliefs and for testing their association with intention and behaviour. The key advantage of TPB is that it takes into account the motivational aspects of personal disease control and the influence of social networks and peer pressure. However it may be difficult to identify and measure the behavioural, normative and control beliefs that are relevant to the particular behaviour and population under study (Fishbein, 2000; Fishbein and Cappella, 2006). The other limitation of TRA/TPB is undervaluation of structural factors like access and availability of resources.

The health belief model

The HBM was developed initially in the 1950s and is the oldest one from the field of social psychology. It was developed in the USA public health service to explain the widespread failure of people to participate in programs to detect and prevent diseases (Hochbaum, 1958; Rosenstock, 1960). This model has been influenced by cognitive theory and associated formulations generally termed as value-expectancy theories (Tolman, 1932). In the context of health related behaviours and consequent utilisation, the value-expectancy concepts are formulated as (1) the desire to prevent illness or to get well (value) and (2) the belief that a particular health related action by an individual would prevent illness. There is substantive empirical support (Janz and Becker, 1984) to HBM with perceived barriers to behaviour change being the most powerful single predictor of HBM dimensions across studies and behaviours. On the other hand, the key shortcomings of HBM research have been inconsistent measurement of HBM concepts (Rogers and Prentice-Dunn, 1997) in both descriptive and intervention research, leading to vast majority of studies being unable to establish validity and reliability of measures prior to model testing.

The frameworks used to examine the features of HCS that mostly investigate access levels, have been developed in the Western developed nations and are generally not applicable to the KSA context, for instance the HBM (Abraham and Sheeran, 2005). The standard HBM does not consider environmental or economic factors, that may influence health behaviour and more importantly to the KSA context. It fails to include the impact of social norms and peer influences on the

individual's decision making process regarding health behaviours, which in countries such as the KSA are a crucial factor (Halligan, 2006). However; (Andersen *et al.*, 1983) proposed a comprehensive framework, which incorporates a wide range of factors that potentially inhibit or facilitate access and that have been tested extensively in prior studies and in diverse contexts. Andersen's (1968) framework for access to HCS is one of the most frequently cited (Andersen, 1995; Andersen *et al.*, 1983; Aday and Andersen, 1974). Andersen (1995) Andersen model highlighted three types of individual determinants of health care usage: predisposing, enabling, and need. The model has continued to be developed as variables are added for instance, those, which describe the health care delivery systems, such as policies, resources and organisation. The impact of the external environment, which relates to factors, such as the economic climate, relative wealth, politics and violence, as well as community-level enabling characteristics, which include medical practitioner availability are dynamic, that change in nature and impact over time (Andersen, 1995).

3.3.3 The socio-demographic approach

Historical development of Andersen's model of health services use

Andersen's model of health has emerged in its current iteration over five phases which run approximately from the 1960s-2000. The first iteration of the model emerged in 1968 (Andersen, 1968) (phase one) and was developed in conjunction with CHAS/NORC national survey to understand why families use health services, to define and measure equitable access to health care and to assist in developing policies to promote equitable access (Andersen, 2008). The

assumption behind the model is that ‘people’s use of services is a function of their predisposition to use services, factors which enable or impede use and the need for care’ (Andersen, 2008 pg. 651).

The model has been influenced by System/Structural Functional Theory (Urry, 2000) which is a leading theory in the field of medical sociology. It draws an analogy between biological system and society. Based on this perspective, sick individual(s) and the health institutions can be analysed within a framework of dynamic social system. Medical sociology addresses the social facets of health and illness, the social functions of health institutions and organisations, as well as the relationship of systems of HCS delivery to other social systems. It also assesses the social behaviour of health personnel and all those who are consumers of health (Andersen and Gibson, 1978). Thus, the model logically groups the factors influencing health behaviour as predisposing, enabling and need factors (Weller *et al.*, 1997). Figure 3.1 below presented the model at phase one.

The initial Behavioural Model (1960s)

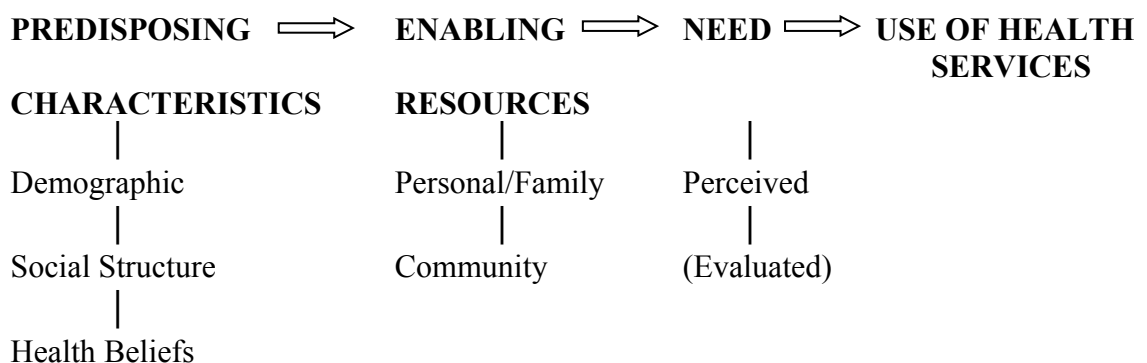


Figure 3.1 An illustration of Andersen’s (2008) model of health services use at phase one.

The predisposing characteristics refer to factors which influence how people use services; for example, demographic factors (which include age, sex, religion, and marital status), social structure (which include formal education, ethnicity, and occupations/income) and health beliefs (which include knowledge, attitude and perceptions towards health and illness and health services).

The enabling resources refers to factors that support the access to HCS for example, health policy (which includes), financial access (which includes at the contextual level geographical access to health care and ratios of providers to patients and individual/family level factors such as level of income, health insurance, price of HCS, region of residence and rural and urban context location), and organisational which includes community.

The need variable refers to the perceived nature of the illness such as perceived severity, total number of days in bed, days missed from work or school.

The composition of the model including the variables of the model has been adapted overtime. Phase two (1970s) of the model acknowledged the importance of the national policy and resources in the organisation of HCS use. Consumer satisfaction was also added in this phase as an outcome measure. The third phase of the development of the model (1980s) have included health behaviours which include personal health practices, process of medical care and use of personal health services in recognition of personal health practices (diet, exercise) interacting with the use of HCS and influencing health outcomes. Outcomes were

included into the model in the 1990s (phase four) in recognition of the multiple determinants of HCS use. The phase four iteration of the model is presented below in Figure 3.2.

An Emerging Model Phase 4

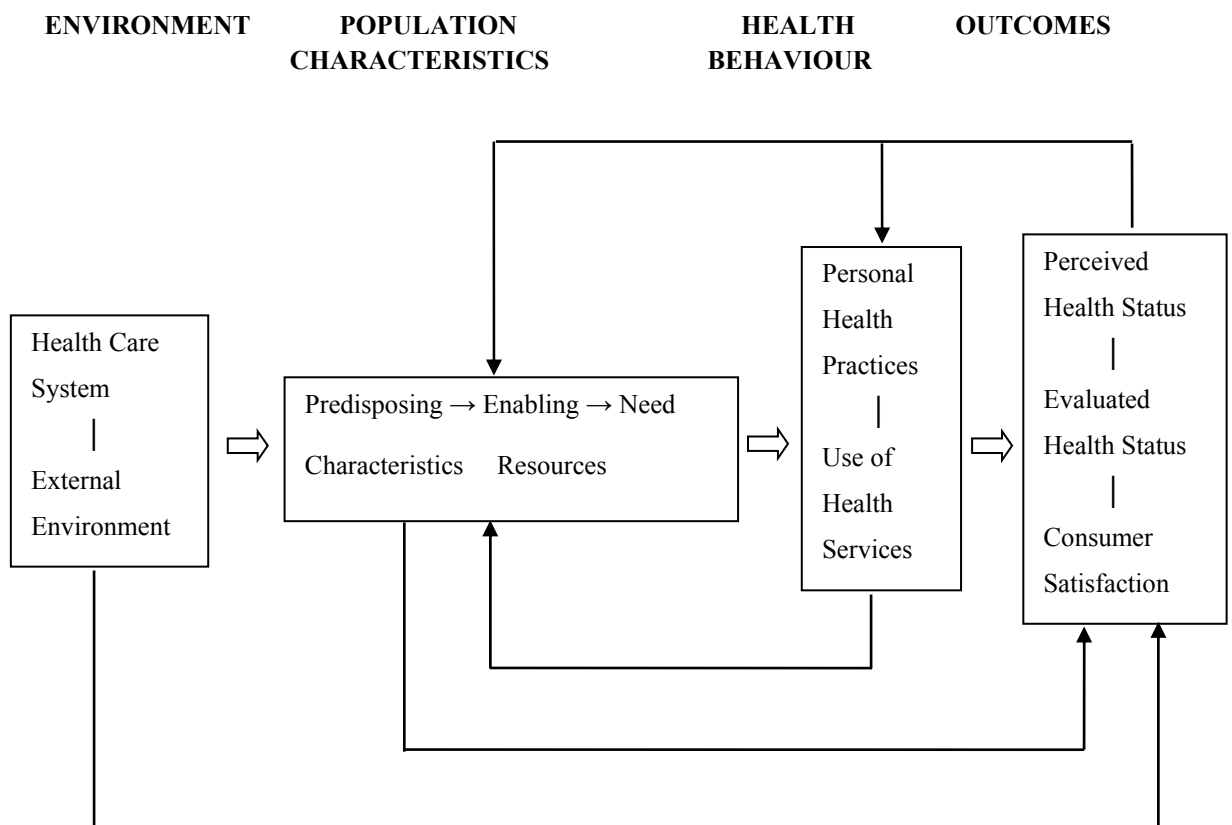


Figure 3.2 An illustration of Andersen's (2008) model of health services use at phase four.

Phase five of the model divided the predisposing, enabling and need variables into contextual and individual level categories and the process of medical care was added under the category of health behaviour. This latest iteration of the model is presented in Figure 3.3 below.

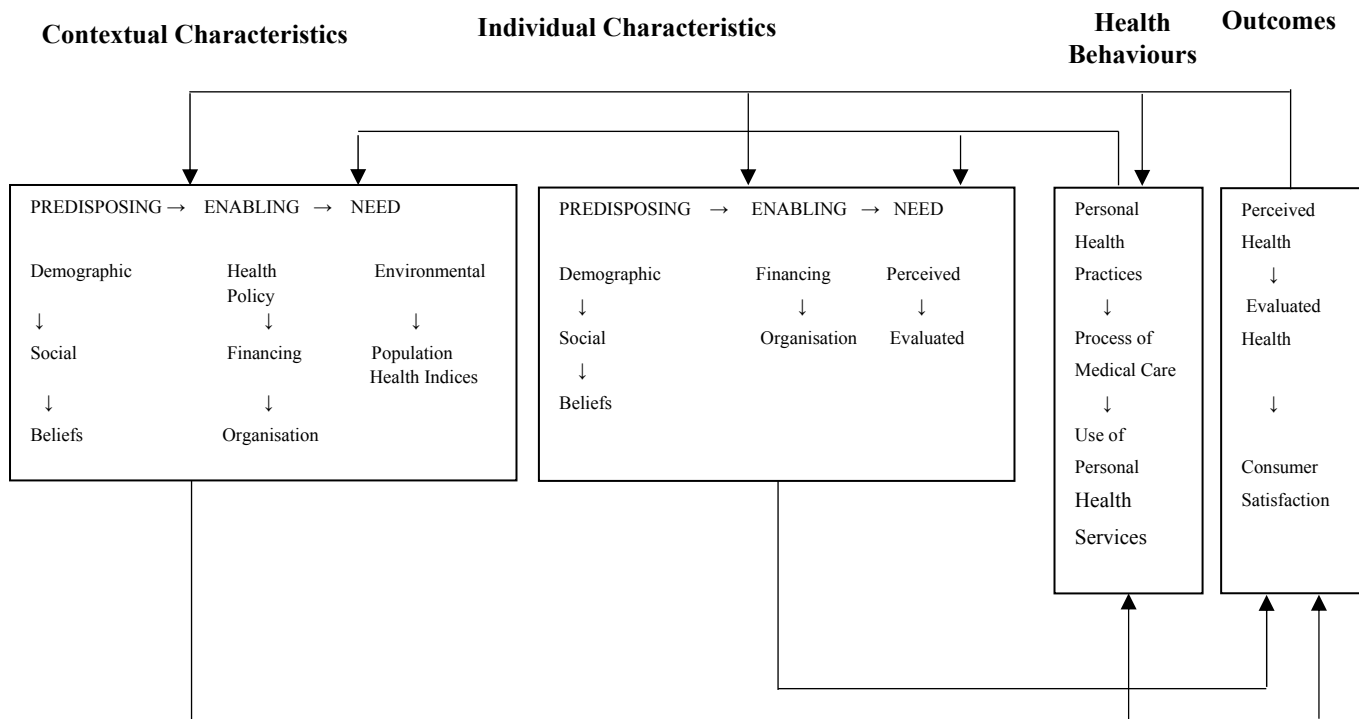


Figure 3.3 An illustration of Andersen's model of health service use at phase five.

The arrows on the model show how the characteristics are related and how in particular health behaviours and outcomes can have an influence on predisposing, enabling and need factors for contextual characteristics and individual characteristics. This study adapted the final stage (phase five) of Andersen's model to conceptually frame this study (see the discussion below of why this model was used).

3.4 Critique of the Andersen model

The section above has highlighted the different approaches to understanding health behaviour and access and utilisation of health care. The phases in the development of Andersen's model have also been presented above. Andersen's model has been criticised for a number of reasons, these are divided into theoretical and empirical reasons in the section below.

3.4.1 Theoretical reasons

Penchansky (1977) has criticised the Andersen model, arguing that the definition of access used is too broad while Gochman (2013) argues that the definition and measurement of its key concepts of predisposing, enabling and need factors are measured needs further explanations. He also argues that other variables need to be added to understand access to HCS. For example, Portes *et al.*, (1992) have argued that there is no emphasis on the role that culture plays in accessing and utilising HCS. Andersen (2008) however argues that social structure and culture are included in the predisposing variable. An emphasis on the contextual characteristics and the predisposing variables of social factors and beliefs do allow researchers to include the role of culture in access and utilisation of HCS. Pourat *et al.*, (2000) for example used cultural beliefs (perceptions of health, immigrant status and cultural beliefs) as an independent variable as well as predisposing, enabling and need factors. There has also been criticism that Andersen's model does not show the frequency (or interval) of health care utilisation (Gochman, 2013). Pescosolido (1991) has argued that the model relies too heavily on users as rationale decision makers.

3.4.2 Empirical reasons

With reference to health behaviour theories Noar and Zimmerman (2005) argues that ‘because we are conducting more research on health behaviours does not necessarily mean that we are adding substantive cumulative knowledge to this area of research’ (pg. 275). Although there is a plethora of research that has used the Andersen model to conceptually frame studies comparison of the evidence is made difficult because researchers choose different iterations of the Andersen model and adapt variables for their requirements making comparison between studies difficult. In other words, the flexibility of the model actually makes comparison between studies difficult. In addition, the selection of variables is very subjective and researchers regard some variables as being more important than others. The subjective selection of variables has been criticised for being unscientific (Weinstein, 1993).

Critics of the model have also argued that Andersen’s model has been unable to explain (particularly the variation in utilisation of health care) and predict health service use (Gochman, 2013). Andersen’s model has also been criticised for being too deterministic. For example Wolinsky and Johnson (1991) have argued that the linearity i.e. the order of the predisposing, enabling and need factors do not always correspond with utilisation in the order Andersen proposes. For example, Bradley *et al.*, (2002) in their study found that enabling and need factors proceeded rather than follow predisposing factors.

3.4.3 Why use this approach for this study

Despite the critiques of the model discussed above, there were many reasons for using Andersen's model of health services use for this study. Firstly, theory is essential to drive research and Andersen's model presents a useful conceptual framework for this research. The Andersen model has gone through five stages of modification in response to theoretical development, which highlights that as well as being relevant for understanding access to PHCS in Riyadh providence, KSA, it reflects the most recent changes to the understandings of access and utilisation of health care.

Secondly, there are a large number of empirical studies that use Andersen's model of health service utilisation to conceptually frame their studies (Jang *et al.*, 2005; Choi, 2002; Kuo and Torres-Gil, 2001). Unfortunately, only one study based in the KSA has been influenced by Andersen's model KSA (Saleh, 2004). Saleh (2004) used secondary data in her study on utilisation of ambulatory health care services in Saudi Arabia: a quantitative analysis uses Andersen's predisposing, enabling and need factors to organise her literature and results. Nevertheless these studies are based in different country contexts to explore equitable access and predict individual utilisation of HCS. The studies are cross national and cross cultural and based in both developing and developed countries (Keith and Wickrama, 1990; Subedi, 1989) and also explore utilisation of non-traditional types of medical care (Aday, 2004; Aday and Andersen, 1981). It has also been empirically evaluated for relative contribution of various predictors of individual's

utilisation of HCS (Andersen *et al.*, 1976; Andersen *et al.*, 1975) a generous body of empirical research allows for comparison between studies.

Thirdly, the model can be applied to different country contexts. The definitions of predisposing, enabling and need factors can be applied to any country context but the model allows the variables to be adapted to be contextually relevant. For example, the model recognises the importance of social and cultural variables in the utilisation of health care usage and it allowed for variables to be included in this study to ensure that their influence is captured when discussing access and utilisation of PHCS in Riyadh province. Existing evidence from the KSA context has highlighted the importance of citizenship, language and religions/cultural belief's as an important enabling factor (Al-Khathami *et al.*, 2010).

Fourthly, the model includes both individual and contextual characteristics, which are scarcely accounted for in the access models. This is very useful when working with statistical data on actual cases. It provides a framework for capturing evidence on the weight of different factors for HCS use and establishes correlation between various factors with good predictability. However, it does not specify how and why these factors affect HCS utilisation (as explained above, however the latter point manifests as a weakness in explaining causality). Andersen's need variable is very difficult to measure and is usually bases on outcome measures. Where the data measuring need is difficult to obtain because of confidentiality reasons and collection of health outcome data use of this variable may be compromised.

Finally, the model allows some flexibility and consequently, researchers are able to modify the model by adding or omitting variables (Dutton, 1986). Aday and Awe (1997) have reported on the way in which researchers have modified the model highlights the flexibility of the model. Andersen himself has stated that modification may be necessary because the final iteration of the model (phase five) is particularly complex and may need adapting empirical research design (Andersen, 1995). Despite recent modifications to Andersen's model, some researchers continue to use older versions of the model. As mentioned above, (section 3.4.3) this thesis adapted the latest iteration (phase five) of the model. A diagram of the adapted conceptual model is presented in Figure 3.4 below.

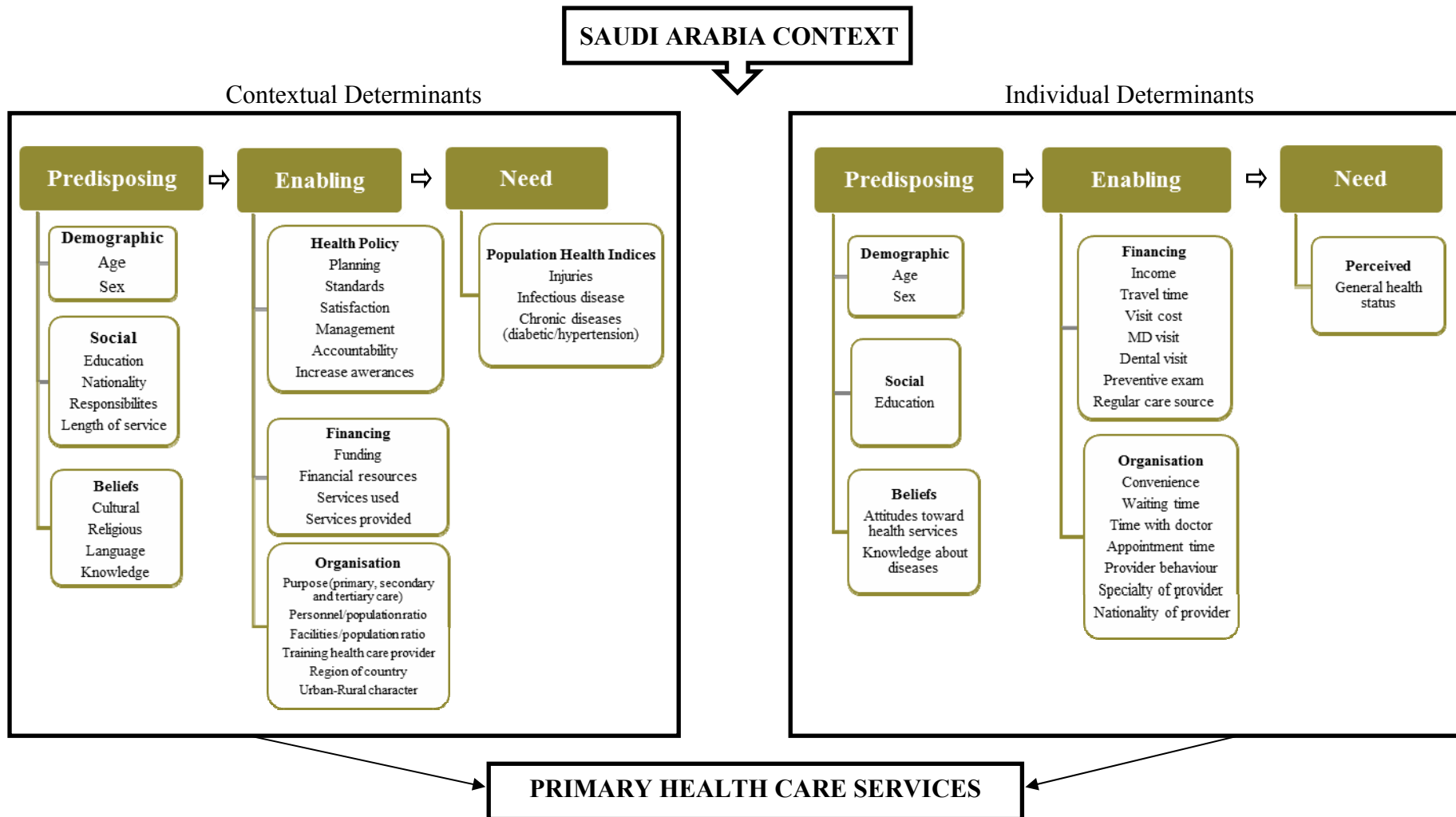


Figure 3.4 The adapted Andersen model

Figure 3.4 shows that this study focused on the predisposing, enabling, need factors for the contextual and individuals characteristics of the model, and omitted the health behaviour and outcomes categories. There were a number of reasons for this decision:

Andersen (2008) argues that ‘understanding health services use is best accomplished by focussing on contextual and individual determinants’ (p.652). Andersen defines contextual characteristics as measured at some aggregate rather than individual level and includes health organisation and provider-related factors and community. Individual determinants are defined as individual characteristics of individuals which help to determine the health care they receive (Andersen and Newman, 2005). In this study, the MOH policy makers and the PHCS staff represent the contextual characteristics and the patients represented the individual determinants.

Contextual and individual factors divide into those that predispose, enable and need factors. Figure 3.4 above shows that for the purposes of this study, these were selected as follows: predisposing-age, sex, education, responsibilities, length of service, cultural, religious, language and knowledge. Enabling-planning, standards, satisfaction, management, accountability, increased awareness, funding, financial resources, services used, services provided, purpose (primary, secondary, tertiary care), personal/population ratios, training health care provider, region of country/urban-rural character. Need - injuries, infectious disease, chronic diseases (diabetic/hypertension).

The predisposing, enabling and need factors for individual determinants were as follows: predisposing-age, sex, education, attitudes towards health service, knowledge about diseases. Enabling-income, travel time, visit cost, MD visit, dental visit, preventative exam, regular care source, convenience, waiting time, time with doctor, appointment time, provider behaviour, speciality of provider, nationality of provider, region of country urban/rural. Need-general health status. The predisposing, enabling and need factors for contextual and individual determinants were based firstly, on using Andersen's definitions of what these variables include and applying these to this study (see section 3.5 below). Secondly, with reference to the existing evidence base and what other researchers reference as the predisposing, enabling and need factors, thirdly through reviewing studies that have used Andersen's model in KSA and contexts similar to KSA (other Gulf countries) and finally with references to the MOH Health Statistics Annual Books (2013) which were particularly useful in identifying factors related to health in KSA, for example; high rates of chronic diseases such as diabetes and hypertension (Yach et al., 2004).

Objective two of the study was to ascertain the perspectives of MOH policy makers and service providers on recent policy and planning developments in PHC and the barriers and facilitators to access and utilisation of PHCS in rural and urban areas of Riyadh province. Objective three was to Understanding patients' views on the barriers and facilitators from the accessing and utilising PHCS in rural and urban areas of Riyadh province. Therefore, the predisposing, enabling

and need variables for contextual and individual characteristics reflect the need to meet these objectives.

Andersen (Andersen, 2008; Andersen *et al.*, 2007) have clearly demonstrated that understanding HCS utilisation best achieved by focusing on contextual, individual characteristics. It was felt that the health behaviour category and the outcomes category would be included in the contextual and individuals characteristics categories. In addition, as these variables were omitted so were some of the feedback loops which highlighted that health outcome may affect health beliefs and need. It was also felt that this was beyond the scope of this study.

Despite modifications to the model, its basic premise that health services use is determined by three factors-predisposing, enabling and need factors (Andersen, 1968) remains the same. Section 3.5 below presents a discussion and explanation of these.

3.5 Factors influencing access and utilisation of health care services

One of the most critical problems facing HCS is the differential access and utilisation of HCS across the world and consequently there has been a great deal of research interest in identifying the determinants of differential HCS access and utilisation. The rising concerns about inequality in access to HCS, is evident from the MDG, which focus primarily on improving access among the poor and deprived (Sachs and McArthur, 2005). Therefore understanding the variables that influence access and utilisation of HCS is essential in addressing disparities and

providing a more equitable HCS. This has been a long-standing interest of HCS planners and HCS researchers attempting to reduce inequalities in access to HCS. Consequently, there is an immense amount of research looking at access and utilisation of health care particularly in the USA (Hartley, 2004; Hartley *et al.*, 1994), Australia (Carey *et al.*, 2013; Gruen *et al.*, 2002), Canada (Sibley and Weiner, 2011; Lamarche *et al.*, 2010), the UK (Erskine *et al.*, 2010). Significantly, in recent decades there are also huge concerns about delivering equitable services in developing countries, such as India (Chandwani *et al.*, 2009), the KSA (Qureshi *et al.*, 1996). There is however a paucity of empirical evidence on access and utilisation in KSA. The access or lack of it is often employed to devise hypotheses for research studies, for instance, concerning the patient's unmet medical needs. The delay in obtaining the required medical care and the number of visits to a medical practitioner (Stevens *et al.*, 2006; Freeman, 2006; Litaker *et al.*, 2005; Bindman *et al.*, 1995). The starting point of analyses is usually access rates that are often based on health outcomes data and administrative data appraising the trends in hospital care avoidance or use of outpatient services (Bindman *et al.*, 1995).

The main themes in the literature on access and utilisation of health care have focussed mainly on two inter-related areas/variables. First social and economic aspects, and the variables of age, sex/gender, income and second geographic access which includes a focus environmental factors such as geography, distance and travel times and transportation (Comber *et al.*, 2011). Commonly, studies focus on one or more but usually a combination of these variables or determinants

(Nnonyelu and Nwankwo, 2014) or focus on services for specific diseases/conditions for example cancer, diabetes, maternity services.

This study used Andersen model to understand access and utilisation of PHCS in KSA. Andersen (2008) groups the variables influencing access and utilisation of services as together as predisposing, enabling, and need factors. Thus the existing evidence base in this area is presented as far as possible using Andersen's typology⁶ and the key variables are discussed below with reference to the existing evidence on how they influence access and utilisation of health care in both developed and developing countries. As mentioned above, there is a dearth of empirical studies carried out in the KSA but where available it is presented as part of the discussion below. The wider literature on access and utilisation of health care adds important insight into factors that may be relevant in the KSA context. Although the key variables affecting access and utilisation of health care below are discussed separately for the purposes of presentation in this thesis, the variables intersect to determine the experience of access and utilisation of health care (Field and Briggs, 2001).

⁶ Andersen's typology allows some flexibility in the arrangement of the predisposing, enabling and need factors. In this thesis, for example income is discussed as part of socio-economic status.

3.5.1 Predisposing factors

Predisposing factors include a set of inter-related variables that predispose individuals to use HCS and include age, sex (or gender), marital status, education, race, occupation, family size, ethnicity (culture and religion) and health beliefs which include knowledge and attitudes about health and illness and HCS.⁷ These variables have various impacts on access and utilisation of health care and are discussed in more detail below. The intention in the following sections is not to simplify the relationship between the variables but to give some broad structure to a complex discussion. Where relevant the intersections between the variables and their impact on access and utilisation of health care will be presented.

⁷Literature search was carried out on the University of Bedfordshire DISCOVER search engine, Medline, Pubmed, CINAHL, Cochrane Library, Science Direct, PsycINFO, PsycARTICLES, SocIndex and Global Health. The table below shows the keywords searched:

Health services OR Primary care OR Primary health care OR PHC OR Community health services OR Rural health services	AND	Access* OR Utilization OR Utilisation OR Uptake OR Barriers OR Use OR Attend*	AND	Riyadh OR Saudi*
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Literature was also searched using snowballing techniques where the references in key papers were also identified, selected and accessed (Greenhalgh and Peacock, 2005). Literature from developed and developing countries was seen to be relevant as Saleh (2004) in her thesis on the 'utilisation of ambulatory HCS in KSA: a quantitative analysis' reports the KSA context is akin to that of a high middle income country whose health care system shares characteristics similar to that of developed countries and but is culturally and religiously conservative which is similar to many developing countries (See Chapter 2, section 2.2 for a fuller discussion of the KSA health care system). As I was interested in the way in which debates around access and utilisation of health care have emerged over history it was important to include seminal papers which may be old and also more recent empirical studies.

Sex and gender

Sex refers to the biological characteristics of men and women whilst gender socially constructed characteristics of men and women. Sex and gender are important determinants of health (Larkin, 2011) and evidence highlights that gender inequalities in health exist in developed and developing countries regardless of SES (Pappa *et al.*, 2013; Diaz-Granados *et al.*, 2011; Eide *et al.*, 2011) are reported to have a major effect on physical and mental health outcomes (Gerritsen and Devillé, 2009).

The literature also highlights that there are gender differences in the way in which men and women access and utilise HCS. Evidence highlights that women tend to be better at identifying symptoms, are more willing to seek help and therefore utilise HCS more frequently than men (Nnonyelu and Nwankwo, 2014; Davis *et al.*, 2014; Black *et al.*, 2012; Doherty and Kartalova-O'Doherty, 2010; Barata *et al.*, 2007; Redondo-Sendino *et al.*, 2006) and this includes general practitioner (GP) visits and a higher number of in-patient visit (Larkin, 2011). Vaidya *et al.*, (2012) in their study in the USA looked specifically at where overall access to preventative care is low reported, women also access preventative care services more than men. Massari *et al.*, (2011) study in Paris argue that gender is an important factor in accessing HIV testing HCS (as well as social and territorial differences). Haglund *et al.*, (2004) in their study on access to coronary revascularisation in Sweden have shown that there are gender (and socio-economic) inequalities in access to cardiac procedures in Sweden. In their study on gender disparities in HIV health care utilisation in the USA Sohler *et al.*,

(2009) have concluded that gender intersects with levels of education, insurance status, mistrust of the health care system, and poor trust in health care providers all influence health care utilisation. However, Schneider *et al.*, (2012) report that social factors contribute more than health care system features in accessing HIV services in South Africa. A study by Hossen and Westhues (2011) in Bangladesh highlights that three main barriers were identified of perceived discrimination based on age, as well as class, gender and structural aspects of the health care delivery system and quality of care.

Whilst maternal health indicators have improved in the developed world as a result of improved access to developments in medicine and improvements in maternity care services, the situation remain poor for the developing world and consequently there continues to be a drive on improving maternal health through access to maternal health services. There is evidence to highlight that access to timely and appropriate maternity services reduces complications during pregnancy and leads to better pregnancy outcomes. For example, Singh and Yadav (2000) in their study in Assam, India found that women who received full antenatal care during pregnancy reported fewer complications during the delivery and post-partum period. A study by Onah *et al.*, (2006) highlights with reference to the use of maternity services in Enugu, south-eastern Nigeria that there are a number of intersecting factors that influence access to maternity services including social factors, economic and health system factors. They go on to argue that these functions at the household level, community level, the health institutions and the wider social and political environment. Similarly a study by Aseweh Abor *et al.*,

(2011) in Ghana highlights that there was low levels of maternity care usage (prenatal care, delivery at health facility, and postnatal care) and access and utilisation was determined by the age of the mother, type of birth, education of the mother, ethnicity, economic status, geographic location, residence and religious affiliation. Birmeta *et al.*, (2013) report poor utilisation of maternal health care in Holeta town in central Ethiopia and attribute this to the poor literacy status of women and family income and health related factors.

Ahmed *et al.*, (2010) and others have argued that there needs to be parallel investments in women's empowerment, poverty eradication and universal primary education as a way of reducing inequalities in access and utilisation of maternity HCS. In a study on access to maternal HCS in Eastern Cape, South Africa Tsawe and Susuman (2014) conclude that there need to be better access to maternal HCS in rural areas. They suggest that strategies for increasing access could include the media broadcasting important messages around maternal health and services, education programmes improving the literacy skills of women, improving maternal HCS in rural settings and addressing the wider determinants of health that impact on women's marginalised status. Gender also affects children's health. Most often mothers are the ones who access health care on behalf of their children (Pokhrel *et al.*, 2005).

As discussed in Chapter 2 (section 2.2.1) the KSA is governed by strict Islamic religious beliefs. The KSA is a gender segregated society where men and women are treated equal but different (Littlewood and Yousuf, 2000) and gender roles

impact on access and utilisation to HCS. For example, women are not permitted to drive in the KSA and when moving from place to place in the KSA should be accompanied by a male family member impacting directly on female autonomy and therefore directly on accessing PHCCs.

Overall, more frequent access to HCS by women is attributed to women's physiology, biology and reproductive roles in these studies whilst men are less likely to access medical services and report ill health (Larkin, 2011). Therefore ensuring a more equitable access to HCS by men and women is needed.

In relation to men's health, research has reported that women are better at identifying signs and symptoms of ill health and seeking help. Men's poor help seeking behaviour has been noted as being the cause of delays in help seeking and consequently poor prognosis at diagnosis (Doyal, 2001; Courtenay, 2000). Tromp *et al.*, (2014) report in their systematic review of equity in utilisation of antiretroviral therapy for HIV in infected people in South Africa that men (and young people, people living in certain rural areas, people who are unemployed and have low educational levels have less access to antiretroviral therapy.

Age

The impact of age on health is determined by a number of indicators, specifically self-reported healthy, indicators of health services use, acute and chronic sickness rates and incidence of mental illness (Larkin, 2011). Hossen and Westhues (2011) research identifies age discrimination (as well as class, gender and structural aspects of the health care delivery services) as a barrier to women accessing government HCS in rural Bangladesh. A study in South Africa found that age (as well as gender, age, family income and education level) all influenced access to pharmaceutical services (Dambisya et al., 2012).

Education

The level of education is noted in the literature as determining the knowledge and information about health and HCF. Scheele *et al.*, (2014) found that mode of access to physical therapy for patients with low back pain in the Netherlands were associated with education level (as well as age, recurrent back pain and previous physical therapy sessions). In their study in Southeast Nigeria (Nnonyelu and Nwankwo (2014) found that low level of education impedes access to HCF because a high level of illiteracy contributes to low life expectancy and individuals are unable to recognise the symptoms of illness and thus seek appropriate HCS. Rumisha *et al.*, (2014) also note that knowledge of pregnant women, poor knowledge impedes access and utilisation to malaria prevention measures in Tanzania. Pappa *et al.*, (2013) report that barriers to accessing PHCS in a sample of the Greek population were due to education differences (as well as cost and lack of time).

Stirbu *et al.*, (2011) in their study of utilisation of general practitioner and specialist services in nine European countries in relation to educational inequalities that people with lower levels of education attended GP surgeries as often (except in Belgium and Germany) compared to those with higher levels of education. People with higher levels of education did however use specialist services more often in all countries other than the Netherlands. They found no differences between women and men. Goldfarb-Rumyantzev *et al.*, (2012) have highlighted the racial disparities in access to kidney transplantation and conclude that these disparities are alleviated in highly educated individuals.

Maternal education has been noted as being particularly important in improving infant mortality (Agha, 2000). Shrestha *et al.*, (2014) report that poor health literacy was a key cause of delayed uptake of HCS in Nepal. They attributed this to low levels of education as well as gender, old age and rural habitation for their sample. In their study in Pakistan Akhtar *et al.*, (2013) report that for men and women's level of education is important in the utilisation of antenatal and postnatal services in the Punjab.

With reference to inequality of maternal health service utilisation in Western Rural China Liu *et al.*, (2014b) report that although there is a pro-rich inequality in maternal health services, the way to reduce inequality between the rich and the poor is to focus on improving education for ethnic minority women in rural remote areas.

Ethnicity (religion and culture) and health beliefs and behaviours

Ethnicity, the socially constructed difference used to refer to people who see themselves as having a common ancestry, often linked to geographical territory and perhaps sharing a language, religion and social customs' (Larkin, 2011) is an important category used to understand differences in access and utilisation to health care. A great deal of research has emerged in developed countries, like the USA, UK and Canada where there are large settler communities which has focused on ethnic disparities in health outcomes and experience according to different ethnic groups (Ahmad and Bradby, 2007; Ali et al., 2006). Differences in health outcomes between ethnic groups compared to the white majority community has led to ethnicity being recognised as a major division in society (Larkin, 2011; Peters *et al.*, 2009)⁸.

Much of the work on inequalities in health, particularly since the 1980s, when official statistics on ethnicity began to be collected (Chaturvedi, 2001) has focused on these net importing countries concentrating on ethnic variations in disease patterns and the barriers and facilitators impacting on the access and utilisation of HCS by different ethnic groups. There is evidence highlighting that members of ethnic groups lack the knowledge of symptoms of disease and associated services

⁸In the UK Pakistanis, Bangladeshis and African Caribbean's are reported as having the worst health outcomes than White residents. Peters *et al.*, (2009) report that Gypsies or Travelers have poor health outcomes than the Pakistani Muslim and African Caribbean and The White residents.

(Ehiwe *et al.*, 2012; Alam *et al.*, 2012; Atkin *et al.*, 2009; Woods *et al.*, 2004; Owens and Randhawa, 2004; Randhawa *et al.*, 2003). Overall the evidence base highlights that people from minority ethnic groups have lower rates of access to HCS (Iqbal *et al.*, 2008; Elkan *et al.*, 2007; Szczepura, 2005; Smaje, 1995). There is an interesting exception to this general pattern, for example members of minority ethnic groups having higher rates of access and utilisation of emergency services (Ballotari *et al.*, 2013).

Differences in access to services between ethnic groups and the white majority has been explained in relation to racism (Nazroo and Williams, 2006), language and the influence of cultural and religious barriers and the impact that these have on accessing and utilising HCS (Banning, 2011; Koffman *et al.*, 2008; Ali *et al.*, 2006; Ali, 2003; Smith *et al.*, 2000). A study by Alam *et al.*, (2012) among British Bangladeshis highlights that the Bangladeshi community experiences one of the worst diabetes-related health outcomes in the UK and identified that language and literacy were the most common barriers hindering access to information and services. Duran (2012) reported that in the USA rural Hispanics are disadvantaged to health care utilisation due to lack of health insurance; as well as language barriers and access to GPs. A study by Espey *et al.*, (2005) highlights disparities in access and utilisation of cancer screening services among American Indians in Alaska.

Jones *et al.*, (2013) in their study on oral health in America found no racial or ethnic disparities in access to timely oral health care among their sample of health

centre patients. Their results indicate that patients who were uninsured or whose insurance did not cover dental care had poorest access to oral health services.

There has been a great deal of continued interest in immigrant population and access and utilisation of HCS across the developed and developing world (Dias *et al.*, 2011). Galanis *et al.*, (2013) found that immigrants in Greece had poor access to public health services because of difficulties in communication with health professionals, high cost of health care and long waiting times. A study in India carried out by Kusuma *et al.*, (2013) also points out the problems of immigrants accessing HCS. They conclude that migrant women in Delhi, India are at risk of receiving inadequate maternal health care, being illiterate and married to an unskilled worker were significant barriers.

Vietnam Målqvist *et al.*, (2013) found that there were large discrepancies between different ethnic groups (by rural and urban population) in relation to maternal health in Vietnam. They conclude that ethnic disparities in maternal health are increasing along ethnic lines and recommend that culturally sensitive interventions are required to address the problem.

In the KSA context, ethnic disparities exist between the Saudis and the nomadic Bedouins with ethnic and citizenship divisions between Saudis and non-Saudi immigrants (see chapter 4 section 4.5.3 below for further discussion on this point) Where religion forms a commonality, these divisions are muted but where they

are not linguistic cultural, religious and socio-economic differences mark immigrants as the 'other'(Lovering, 2006).

Culture and religion affect health-related behaviour and determine a positive or negative response to the management of their disease/condition. In the KSA context, research has for example reported how knowledge of causes and treatment are influenced by culture and religion (Nabolsi and Carson, 2011; Underwood *et al.*, 1998). For example, a study by Alqahtani (2012) reported that Saudi parents of children with Autism believed that a vaccine caused the condition also cultural reasons such as black magic and the evil eye could cause autism hence cultural and informal intervention options dominated. Saati (2013) have shown that religion and spirituality impacts on breast screening practices for their sample of women and similarly Salman (2012) has shown that culture and religion impact on cervical screening among Arab women.

An overreliance of cultural and religious interventions has been reported as delaying help seeking in many studies in the US and the UK particularly among ethnic minority groups (Alegria *et al.*, 2015; Szczepura, 2005). Research on Arab Muslims living in the US reports that attitudes towards accessing formal mental health services are affected by cultural and traditional beliefs about mental health problems (as well as knowledge and familiarity of formal services, perceived societal stigma and the use of informal indigenous resources (Aloud and Rathur, 2009).

Research with Saudis in the KSA also reports similar findings. AlGhamdi (2010) reports misconceptions and negative attitudes about vitiligo are widespread among vitiligo patients in the KSA. Al-Eisa and Al-Sobayel (2012) report that gender segregation in the KSA meaning that there is a high level of inactivity with reference to the international recommendations for minimum activity among Saudi women and consequently, there is a need to design gender-sensitive and culture-sensitive interventions to enhance physical activity. In neighbouring Amol, Iran a study on the pregnant women fasting during Ramadan reported that women in their sample said that fasting in Ramadan was compulsory (despite exemptions) and as a consequence, women experienced fatigue and weakness (Firouzbakht *et al.*, 2013). Alqahtani and Salmon (2008) argue that GPs need to address patient's psychological and supernatural concerns as well as physical symptoms.

In the KSA many health care service providers are non-Saudis and non-Muslims. The health care workforce is recruited from around the world which Al-Shahri (2002) has reported 'can render their caring for Saudi patients more challenging than joyful' (p133). The need for culturally sensitive services as way on improving access and utilisation of services is frequently in the evidence base. There is now an extensive evidence base from the developed and developing world on the need for culturally competent health care services (Saha *et al.*, 2008; Betancourt *et al.*, 2005; Betancourt *et al.*, 2005; Zambrana *et al.*, 2004; Johnson *et al.*, 2004; Anderson *et al.*, 2003; Campinha-Bacote, 2003; Betancourt *et al.*, 2003; Brach

and Fraser, 2002; Brach and Fraserirector, 2000; Chin, 2000; Campinha-Bacote, 1999; Meleis, 1996).

Carolan-Olah *et al.*, (2013) in their study on service access among elderly Vietnamese with type 2 diabetes, report that their sample identifies important aspects of health care access as being treated with respect, having their questions answered and having access to interpreters and information in Vietnamese. They conclude that attention to this detail is likely to increase access to HCS and diabetes management. In the same way for the KSA context (Sidumo *et al.*, 2010) concluded that non-Muslim nurses lacked knowledge about Muslim practices in Obstetric units in the KSA. Subsequently there is a call for non-Saudi health care professionals to improve their awareness about Saudi culture and Islam to avoid cultural misunderstandings (Sidumo *et al.*, 2010; Al-Shahri, 2002).

Much of the evidence on cultural competency in the KSA context has focussed on nursing. Research concluded that, an awareness of religion and culture and the consequent beliefs and practices of Muslim patients is essential for non-Muslim and non-Saudi nurses working in the KSA (Halligan, 2006). A number of strategies for improving the cultural competency of expatriate nurses in the KSA has been suggested e.g. nurses reflecting on their clinical practice and understand the role of cultural and religious differences in the delivery of health care. Introducing nurses to the cultural dimensions of health care in the KSA (Luna, 1998) for example, Islamic health practices, health behaviours, code of ethics and the framework of Islamic perspectives of caring and spirituality (Rassool, 2000).

Lovering (2012) discusses has presented a model the Crescent of Care nursing model which provides guidance of meeting the needs of Arab Muslim patients.

Aldossary *et al.*, (2008) argue that one way to ensure that patients in the KSA receive culturally appropriate holistic good care is to ensure that there is an increase in the proportion of indigenous nurse workforce who shares common culture and language with patients. Saudi nursing has relied heavily on the expatriates but in recent years there have been initiatives to increase indigenous nurses. However the gender-segregated KSA education system reinforces societal expectations of women (Miller-Rosser, 2006; Hamdan, 2005; Baki, 2004; Pharaon, 2004). In other words, education certainly improves women's career options but does not reduce gender and power relations (El-sanabary, 1994). Therefore, culture and religion all play an important part in Saudi women opting out of nursing careers and is a major challenge to choosing and working as a nurse due to negative public perceptions of the nursing profession in the KSA (Mebrouk, 2008). Almalki *et al.*, (2011b) point out that a number of suggestions for raising the profile of nursing among indigenous Saudis. They suggest that the media should promote positive images of nursing, the education sector should reconsider the length of nurse training reducing it from five to three years without compromising standards, additional financial support for nurse students and that nurse students should be paid a full salary during their intern years as is the case with medical students (Tumulty, 2001).

3.5.2 Enabling factors

Enabling factors are related to the factors, which enable or present a barrier to individual's use of HCS. Enabling factors and barriers can be broken down further into individual level factors. For example, socio-economic factors such as the ability to pay for HCS/insurance and the influence of culture on patterns of HCS use. ⁹Community level factors include the numbers of health care providers to population, cost of HCS and location within a country; for example urban or rural area.

Socio-economic facilitators/barriers

Income

Socio-economic facilitators/barriers include factors such as the ability to pay for HCS/insurance. The link between SES and access and utilisation to health care is well represented in the literature (Liu *et al.*, 2014a; Kuo and Lai, 2013; Hansen *et al.*, 2012; James *et al.*, 2006; Ensor and Cooper, 2004). An individual's SES comprises of the variables of level of education, type of employment, income of the household and the quality of housing. Some of these determinants have been presented under predisposing factors following Andersen's typology in other research but the model allows flexibility in discussing and presenting these variables as discussed in section 3.4.3. The variables of education and income are

⁹As discussed in Chapter 2 PHCS in KSA is free.

discussed and presented under enabling factors for the purposes of this thesis as education, employment; income (and housing) is seen as key variables making up an individual's SES.

There is an extensive evidence base from developing and developed countries highlighting how a person's socio-economic status affects the access and utilisation of HCS. The evidence suggests that the more socio-economically advantaged the individuals are, the more likely they are to access health care (Adler and Ostrove, 1999). Health care in the UK is publically funded and is free for UK citizens and residents and is 'free at the point of use' ¹⁰ but SES has been linked to health behaviour, access and utilisation of HCS.

Larkin (2011) focussing on the UK context, highlights that health-related behaviour is linked to SES with lower class taking more risks with their health. For example, higher social classes have better diets than the lower classes. People in the higher income bracket are likely to consume more alcohol and are therefore at higher risk of alcohol related diseases. Evidence also shows that there is a close link between obesity and social class with lower social classes having higher rates of obesity and there are a higher percentage of smokers among the lower social classes. Paulsen *et al.*, (2012) report that findings from a survey in Denmark

¹⁰With the exception of prescriptions, optical services and dental services.

(which has a health care system that is free) show that SES had a significant impact on blood pressure control.

In countries where access to HCS are paid for e.g. cash or through insurance; both these variables determine individual's ability to access appropriate and timely HCS. Yabroff *et al.*, (2013) highlight that there are disparities for the uninsured and publically insured cancer survivors aged 18-64 years in America. Their findings suggests that cancer survivors who were publically insured were more likely to have usual source of care and use preventative services than uninsured or publically insured adults. The introduction of Scotland's free eye examination policy in April 2006 is reported by Dickey *et al.*, (2012) to have resulted in more people getting their eyes tested but the survey showed socio-economic differences and that people with low education and low incomes were not accessing the service and consequently they report that eye care service utilisation in Scotland has widened after the free eye care policy was introduced suggesting that other variables may need to be factored in. Ayo-Yusuf *et al.*, (2013) showed that racial disparities in accessing dental health care in South Africa were determined by socio-economic position and health insurance. Rabi *et al.*, (2006) in their study on SES with diabetes prevalence and utilisation of diabetes care services however found that there was no access bias towards income.

Low SES is also linked to low demand in some groups and often this is a consequence of the lack of health insurance. Gundgaard (2006) in a study in Denmark reported that there is some inequity in the Danish health care system

disfavouring lower income groups. The results of a study by Lemstra *et al.*, (2009) on the association of SES with health care utilisation in Saskatoon, Canada however reported that residents with a lower income had higher usage of hospitals, physicians and medications due partly to higher disease prevalence. Verlinde *et al.*, (2013) reporting on a questionnaire survey carried out in Flanders, Belgium found that low income people (also with low trust in GPs and people with poor self-rated health and those suffering from severe depression) were more likely to cancel or postpone visits to the GP.

Income inequality is particularly pertinent in developing countries, in which the gap between rich and poor and where the poor are likely to have the worst health. Meyer *et al.*, (2013) report low income as a factor in accessing HCS in six countries in Asia-Pacific (Australia, Hong Kong, Japan, South Korea, Taiwan and Thailand. Emamian *et al.*, (2014) in their study in Iran conclude that a considerable percentage of adults even those who have a visual impairment do not receive appropriate eye care and they highlight that there is a definite economic inequality with poverty being a major barrier to accessing optical care. Barraza-Lloréns *et al.*, (2013) in their secondary analysis of the National Health Survey 2000 and the National Health and Nutrition Survey 2006 in Mexico conclude that standard of living, health insurance and education contribute to the inequitable distribution of health care.

The literature highlights how women and young children experience the greatest impact of socio-economic inequalities. Shen *et al.*, (2014) also conclude from

their two population-based cross sectional surveys in the Zhenan and Lantian counties of western China that in 2006 and 2008 the use of maternal services in these areas was unequal between poor women when compared to wealthier women. They concluded that out-of-pocket expenses should be minimised to improve utilisation of maternal HCS for poor women. Liu *et al.*, (2014b) also found that there is a strong pro-rich inequality of maternal health services in western China and suggest that there should be a focus on women's education to help reduce the inequality gap. Ruijsbroek *et al.*, (2011) with their study in Denmark found that socio-economic health disparities occur very early in life and disadvantage poor children's health before birth and poor health continues throughout life.

Whilst poverty is a well acknowledged barrier to accessing HCS. Research has highlighted that in cases where fees for health care are removed barriers to accessing HCS remain Johnson *et al.*, (2012). For example De Allegri *et al.*, (2011) discuss a case study in Burkina Faso where the fee for antenatal care were substantially increased antenatal attendance but conclude that other factors such as distance from the health facility, ethnicity and religion all need to be factored into policies to address barriers.

There is a general expectation that the SES of those living in urban areas is better than those who reside in rural ones and, therefore, better access to health care for the former. However, even urban dwellers experience significant imbalance in health care access between rich and poor irrespective of the service availability.

The populations of many cities include unregistered immigrant and transient populations are recognised as having poor access to health care. This factor was suggested as the core reason for the wide variation detected in health care access in urban regions. The study conducted by (Freudenberg, 2000) compared two-tiered health care systems, in which insured individuals were able to access preventive and routine health care, whereas the relatively unseen, deprived peoples used emergency department care, in cases of urgent need for health facilities (Jacobs *et al.*, 2012). This practice highlighted the tendency of such poorer individuals to ignore common health issues until they transformed into very severe illnesses, for which hospital based care was required. A simple health condition that could be readily diagnosed and treated by PHCC escalated to a severe health problem. Hence there is evident rationale for early intervention in health issues using PHCC; the wider health care access gap is exacerbated owing to rural areas generally comprising of high percentages of uninsured citizens (Hartley *et al.*, 1994). The fact that availability and usage do not imply that populations will access services is further illustrated by the health gap of nineteen years between indigenous and non-indigenous populations in Australia, as measured by life expectancy, whereas in New Zealand it is just seven years; lower but still a significant difference (AIHW, 2005). Many groups residing in these two countries do not use the PHCS that are available, for instance, indigenous people usually neglect their health needs and low-income individuals generally depend on government funded HCS (Scott *et al.*, 2003).

Developing countries experience mass migration of people from rural to urban areas, in order to find regular and relatively well-paid employment, which increases the demand for urban PHC provisions. This trend is currently very evident in China, in which there is a significant socio-economic barrier between rural-to-urban migrants and the established populations. The lack of insurance coverage, high cost of living, and demanding work conditions of these migrants are all relevant and significant factors, which inhibit their accessibility to HCS (Hong *et al.*, 2006). Unlike the established employee, who generally receives organisational health insurance, the migrants are not provided with the same benefits and, since they are not registered as belonging to an urban household, these migrants rarely visit PHCCs because they are either too expensive and/or they fear losing their job as a consequence of sickness (Hong *et al.*, 2006). The results of these factors is that rural to urban migrants delay accessing care through PHCC until the condition becomes critical and costs significantly more to receive treatment.

In Colombia, contrasts greatly with that described in China, access to health care is dependent on the individual SES and health insurance provided for everyone, whether or not they could afford to pay on a personal basis (Hong *et al.*, 2006). This policy suggested that access to health care should be improved in Colombia. However noticeable declines in the numbers accessing HCS since these measures were implemented, which indicated that other significant socio-economic barriers may exist. These barriers are suggested as being insurance enrolment, education levels, income and characteristics of services, for instance geographical

accessibility (Vargas *et al.*, 2010). In depth examination of the situation revealed that the authorities had adopted a competition based health care provision, in an attempt to instil greater equity and efficiency into what was provided. The managed competition model, in fact, widened the barriers to health care access and created new ones that did not exist under the public sector driven HCS. This was created by the insurance companies and the health providers combining activities and determining both the conditions under which individuals could gain access to services, and the specific services they would be able to receive. Therefore imbalance remained inherent in the system, since wealthier individuals were able to pay for extra services whilst the poorer citizens had less choice than would be normally available under a government run health care system. The initiative had failed to guarantee that provision of health care would be maintained at adequate levels in rural areas; (Vargas *et al.*, 2010) suggest that legislation does not guarantee access unless it's planning and delivery integrates the features that are most likely to ensure equity between urban and rural populations. The researchers concluded that managed competition was not a suitable model for low and middle-income nations (Vargas *et al.*, 2010).

The socio-economic value put on good health by different individuals was an approach taken by (Grossman, 1972). This was suggested as a factor that governments needed to consider when devising health care policies. In a situation, in which the population puts a low value on good health, as is often the case in rural areas, then the government could focus on policies such as education to encourage usage. An economic analysis of health care consumption was

considered by (Grossman, 1972) from a consumption and investment perspective, similar to a company share that produces a dividend over a period of time. The assumption was that each individual inherit an initial stock of health at a given level, that the level declined with age but could be maintained at higher levels by investment. Hence when the individual purchases medical services, what they are actually doing is investing in good health, when this situation is compared with an individual's demand for medical services, (Grossman, 1972) suggests that this action is actually the demand for good health. The personal value derived from possessing good health may be lower in rural areas and explain why those individuals tend to ignore their health issues.

There is a parallel between the significant difference in potential earning levels of urban and rural residents and the value the urban and rural residents appear to attribute to good health status. A similar explanation could explain the health seeking behaviour of rich compared with poor residents of urban areas. Since individuals have different values and perspectives, other explanations must be sought than merely those based on economics, a selection of these are discussed in more detail below.

Dubikaytis *et al.*, (2010) discuss health care utilisation patterns by SES among reproductive women in St. Petersburg, Russia and found that there was considerable inequality in health and utilisation of preventative health services. SES was associated with poor self-rated health. Ahmed *et al.*, (2010) also found that there was a relationship between women's SES, education levels and

empowerment status in terms of access to maternal health service utilisation in developing countries. High levels of women's poverty were a barrier to women accessing maternal health services.

Nikovska and Tozija (2014) report that low SES (education, unemployment and ethnicity) are important barriers in the access of TB services in the republic of Macedonia. Similarly, Zhang *et al.*, (2007) have also reported in their secondary analysis of the Chinese Household Health Survey for 2003 that access to TB services is problematic in some rural areas of China and access declines with affordability and declining SES.

Socio-cultural barriers

Culture, religion language and knowledge about disease

Evidence suggests that older people living in rural areas of the US have poorer health status than that of the same age group residing in urban areas of the US (Mainous III and Kohrs, 1995). This fact was attributed to diet by (Morgan, 2002), who stated that the diet of rural dwellers was likely to be lower in nutritional value, they were more likely to be obese, smoke more and exercise less than older suburban dwellers. Similarly, Wilcox *et al.*, (2000) claimed that rural women, especially those with lower education levels, were more likely to be inactive than urban women. The study by (Hartley, 2004) reinforced these features of the social environment of rural dwellers, suggesting that educators already had knowledge of this fact and needed to take 'culturally sensitive' approaches to find solutions, which would transform the unhealthy behaviours of rural dwellers. This was not

being addressed by most rural health researchers or policy makers. It was stated that many of the public health problems in rural areas would not be solved by increasing the number of medical practitioners. What was needed instead was a social perspective that would focus on preventative methods. Promotion of a healthy lifestyle was considered the most appropriate initiative but the diversity of rural features needed to be acknowledged in forming solutions over a wide area (Hartley, 2004).

Individuals and groups that experience social exclusion, as a consequence of low incomes, living in isolated areas, being homeless or lacking a secure home and experiencing difficulty in accessing essential medical care, may be evident or unseen in rural regions. The rural environment is often incorrectly viewed as an ideal residential location for healthy living but there are frequently high levels of poverty, which have direct implications on health status and consequent health implications (Clope and Little, 1997; Clark, 1997). The global evidence, contrary to the myth of linking rural living with health, suggests that on average, the health status of rural dwellers is much lower than that of residents of urban areas. For instance, studies based in Australia have found that families living in rural locations have higher rates of illness, disability and mortality (McMurray and Clendon, 2011), conditions that are worsened by the low access to care and medical practitioners. The disproportionately high numbers of indigenous Australian people, who represent the socially excluded, experience poorer health, which is a consequence of many features of their social environment, not merely the geographical location (McMurray and Clendon, 2011). These features are

often place-specific, as stated by (Hartley, 2004) when discussing the USA situation. Indigenous Australians are acknowledged to have drug and alcohol addictions, lifestyle pressures, due as a consequence of rising transportation costs, unreliable, expensive communications, and the lack of adequate education and health services (McMurray and Clendon, 2011).

Economic migrants who tend to settle in urban areas also experience marginalisation and exclusion due to socio-cultural issues. Agudelo-Suárez *et al.*, (2013) argue in their systematic review of opinions and perceptions about barriers and determinants of health services' accessibility in America, highlights that economic migrants experience barriers to accessing HCS due to a lack of communication between service providers and migrants, also to idiomatic difficulties and cultural differences.

The positive aspects of rural life are reported in many studies, such as (Phillips and McLeroy, 2004) that highlights good social networks, long lasting friendships and connections, which also include shared experiences, helping one another and a high quality lifestyle. These features of rural areas must be appreciated, even though aspects of economic infrastructure and health care provision may be less than ideal (Phillips and McLeroy, 2004).

A study on the access to antenatal care among women in rural Nepal highlighted that women were influenced by their mother in-laws on whether or not to use antenatal services, illiteracy and whether it was a first or second pregnancy

(Dhakal *et al.*, 2011). Rani *et al.*, (2008), reports that in India women's utilisation of reproductive HCS is influenced by the decision of the partner.

Ibanez-Gonzalez *et al.*, (2014) in their mixed-methods exploration of patterns of health care utilisation of urban women with non-communicable disease in South Africa highlight that negative experience of HCS and poor confidence in biomedicine delays help seeking. They also point out that this lack of confidence in doctors and superior belief in traditional healers delays help seeking behaviour. They conclude that demand side and supply side measures to ensure increased trust between patients and providers needs is essential in improving access and utilisation of HCS.

Environmental barriers

Urban-rural geography

As mentioned above, the existing evidence base highlights that access to health care is generally poorer in rural areas as compared to urban areas, leading to poorer health outcomes for rural dwellers (Wakerman *et al.*, 2008). Much however depends on the definitions of rural and urban because they vary depending on the country context (see discussion in Chapter 2, Section 2.3.5). The industrialisation of countries has substantially increased urbanisation and the distinction between rural and urban areas in terms of equal location of HCF has become more significant with rural areas most often being served more poorly (Zulian *et al.*, 2011). However, a huge environmental impact on the health status of those individuals residing in densely populated urban areas is the lack of

outdoor spaces and facilities, to engage in physical activities for exercise and pleasure. In addition, air quality may be low; this often leads to enhanced rates of respiratory related diseases, such as asthma (Schwartz *et al.*, 1994). The environment is worse in many countries in the developing world, since urban dwellers may live in large slums, lacking basic sanitation and utilities. The slow rate of infrastructure development may add to the number of infectious diseases, increasing the rate of poverty there is, therefore as is the case in the KSA context, the recommendations of (Almalki *et al.*, 2011a) for increasing access, is also a key factor for urban dwellers.

In the context of the KSA the evidence base highlights that in addition to rural urban location, accessibility is influenced by the interdependency of factors (Almalki *et al.*, 2011a; Al-Yousuf *et al.*, 2002) such as distance and transportation impact on access and utilisation of HCS. The MOH health statistics annual book recognised the uneven distribution of HCS in the KSA but does not provide any explanation of the underlying causes. It was found that, populations living in remote areas of the KSA cannot access suitable HCS (Almalki *et al.*, 2011a). In the KSA, despite the relatively uniform distribution of PHCCs, the nomad population and rural do not tend to use the available basic services sufficiently (Qureshi *et al.*, 1996). This may partly be a consequence of language barriers, since the majority of doctors, nurses and expatriate workers who may not speak the native language of Classic Arabic. Modern Standard Arabic (MSA) is the official modern language of the Arab world, commonly used in the media and in education, and derived from the Classical Arabic language (CAL). Most medical

practitioners have learnt to communicate in MSA, but not CAL. Although the language is the visible barrier, the hidden one is an interactivity issue owing to cultural gap, which affects the practitioner's ability to provide appropriate care and the patient's desire to seek it. In most cases, what the patient demands does not match the services that doctors and hospitals prefer to provide so that consultations are limited and the situation increasingly difficult. The plight of nomads globally is highlighted by (Qureshi *et al.*, 1996), who emphasize that their situation, as well as that of rural dwellers, is worse in developing than in developed countries, and noting the intention of the Saudi government to decrease inequality by the implementation of PHCC service had not been successful. One of the core reasons for this failure to provide adequate education and health care for nomads was a result of their geographic location, low population density and mobility (Qureshi *et al.*, 1996).

In addition to these factors, the socio-cultural gaps created by the limited tasks that medical practitioners could administer, for instance, policies that suggest preferential use of urban-based, obstetricians based in hospitals for delivering babies, rather than midwives (Mavalankar and Rosenfield, 2005). Referral of rural patients for specialist care, who initially attend a low level clinic, is another issue for rural patients; they are often referred too late or not at all, since certain diseases such as tuberculosis are considered a source of shame (Kiwanuka *et al.*, 2008; Storla *et al.*, 2008). Other examples are: consulting a psychiatrist for treating depression or other mental condition since psychiatrists are often

associated with severe mental disorders and consultation for sexual disorders is almost non-existent (Warne and Raza, 2008).

Distance/travel time

The distance from the patient's house to the HCF is considered to be a crucial component in access and utilisation of care.¹¹ The relationship between distance, access and utilisation is referred to as the distance-decay effect (McLaren *et al.*, 2014; Syed *et al.*, 2013; Zielinski *et al.*, 2013; McGrail, 2012; Zulian *et al.*, 2011; Gething *et al.*, 2004). HCF vary between urban and rural areas in most country contexts and as mentioned above, services tend to aggregate in urban areas which means that citizens who live outside the urban areas frequently need to travel a significant distance to access medical care (Van Nostrand, 1993). Therefore, the geographic inaccessibility of rural communities' impacts on the extent to which timely and regular HCS can be accessed (Miller *et al.*, 2014; Mathison *et al.*, 2013; Regan and Wong, 2009). The average distances travelled to access health care obviously varies from country to country depending on geography.

Al-Shahrani (2004) reports that in KSA, users of PHCS are reluctant to travel long distance as even car travel is uncomfortable during the summer season which can

¹¹The interest in the impact of distance has led to the emergence of geographic information systems (GIS) in explaining inequalities in health outcomes based on population groups. For further information please see Bowie *et al.*, (2013).

last up to eight months. Other research has also reported that users are reluctant to travel long distances to access PHCS. Al-Ghamdi (1982) and Ali (1992) in their studies in Jeddah and Riyadh respectively found that the average distance travelled for using HCS was 5km. Al-Ribdi (1990) in his work in the remote Al-Qassim region has reported that users travelled up to 14 km to access PHCS.

It is important to note the topography of the landscape, availability of road networks, and public transport links all influence user willingness to travel even if distance to the PHCC is short. Distance to PHCC has been reported as an enabling factor for women in KSA, for example in a study with sample of 880 women attending antenatal services at the PHCC in Al-Baha region of KSA, 91.3% of women were reported as saying that the major factor influencing their choice to attend was based on close proximity to the PHCC and therefore more convenient (Al-Nasser *et al.*, 1994). In the KSA (Almalki *et al.*, 2011a) proposed that, if accessibility to HCS is to be possible in all parts of the country, then a holistic strategy for the redistribution of HCS, involving PHCCs, general hospitals, central and specialist hospitals, as well as the health professionals, should be adopted by the MOH. The MOH should also liaise with other sectors such as transport, water and power companies and social security services, in order to develop services in deprived areas and to care for people with the greatest needs.

There is also evidence that large geographical distances between rural HCF leading health inequalities (Stocks *et al.*, 2009). Salinas *et al.*, (2010) found in their study in Mexico that older Mexicans living in the most rural areas have the lowest levels of hospitalisation and visited the physician less frequently than their

urban counterparts. They continue to point out that need factors such as medical conditions; diabetes, previous heart attack, hypertension, depression, functional limitations did influence physician visits but did not explain the variations between rural and urban older Mexicans. A study carried out by Stocks *et al.*, (2009) in Australia identified differences in statin prescribing in Australia across geographic location. Lubomski *et al.*, (2013) reported significant differences in the presentation, management and use of health services between patients accessing regional and urban Parkinson's disease clinics in Victoria, Australia. In relation to maternal health care utilisation in Vietnam Målqvist *et al.*, (2013) found that there were large discrepancies between urban and rural population (and by ethnic group).

Hiscock *et al.*, (2008) report that location of GP surgeries and pharmacies is associated with health service use. For example, Grzybowski *et al.*, (2011) report that rural women in Canada who have to travel to access maternity services has increased rates of adverse perinatal outcomes. In relation to out-of hours services in Norway specifically, Raknes *et al.*, (2013) conclude that 'long distances are associated with lower utilisation of out-of-hours services and the health and SES of the individual concerned' (p.1). Comber *et al.*, (2011) have found that the impact of distance was dependent on the services being utilised. They concluded that 'the notion of access is a multi-dimensional concept, whose composition varies with location, according to the facility being considered. However, Brewer *et al.*, (2012) concluded that distance and travel time were only weakly associated with cervical cancer screening, stage at diagnosis and mortality in New Zealand in

their study in New Zealand. (Pierce, 2012) also argues that there was no significant impact of distance to access to health care for rural women with heart failure living in rural upstate New York.

In relation to paediatric health utilisation in western Kenya, Feikin *et al.*, (2009) report that clinic visits decreased depending on distance from the patient's house. A study carried out in Yemen by (Al-Ta'iar *et al.*, 2010) concluded that driving distances and driving time were strongly associated with vaccination uptake. McLaren *et al.*, (2014) in South Africa found that the poorest patients lived the greatest distance from the health facility and concluding that minimizing the distance that poor South Africans have to travel to the HCF will reduce health disparities and improve outcomes. In a study in Nepal, it was reported that less than one third of households had access to government HCF and distance was found to be significantly associated with access to HCS (Paudel *et al.*, 2012). Friedman *et al.*, (2013) in their study in central Haiti report that utilisation of surgical services was inversely related to distance from residence to hospital in rural areas.

Ensuring that services are provided close to communities are now a well-established approach to HCS delivery. A study on sexual health in California found that availability of family planning clinics led to less risky behaviours among older youth (Bersamin *et al.*, 2011). Feikin *et al.*, (2009) also found that there was the distance decay effect in their study on distance of residence from peripheral health facility on paediatric health utilisation in rural western Kenya.

Transportation and travel time

Transport accessibility has also been recognised as a critical component of the health care access in the developing world and developed world. In some western developed countries, differences in health care access between rural and other areas focus on poor access to transportation, such as not owning a car or irregular public transport facilities (Vargas *et al.*, 2010; Lindsay *et al.*, 2006; Jordan *et al.*, 2004). Consequently, transport barriers are frequently recorded as a reason for the differential access to HCF between urban and rural dwellers (Vargas *et al.*, 2010; Lindsay *et al.*, 2006; Jordan *et al.*, 2004). (Gregory *et al.*, 2000) for example in their study on geographic proximity to cardiac revascularisation services on service utilisation in New Jersey, USA concluded that a shorter distance to services and availability of services at the nearest hospital were strongly related to increased use of cardiac revascularisation services.

In developing countries, the transportation barrier often reflects the relationship between poverty and transportation availability (Syed *et al.*, 2013). Large distance from the HCF were the most often cited barrier in HCS in a study looking at urban and rural differences in health care needs, utilisation and barriers in Croatia (Pristaš *et al.*, 2009). Målqvist *et al.*, (2010) report that the distance from mothers' home to the closest health facility was attributed to explaining the elevated neonatal mortality risk, concluding that the geographical dimension should be considered when planning interventions to reduce infant mortality. They argue that this is particularly important when targeting socio-economically disadvantaged groups. Similarly, Zafar *et al.*, (2013) argue that access to surgical

facilities particularly in rural areas was poor and a possible cause of table death and consequently a more equitable distribution of services should be a priority of the Pakistani government.

There is also evidence highlighting that a number of variables intersect with transportation barriers. For example lower socio-economic groups, older people, less educated and women and ethnic minorities have poorer access to HCF, so it follows that the individuals with the greatest need experience the greatest transportation barriers. Overall, the transport barriers to HCF can lead to rescheduled or missed appointments, delayed care, and poor management of chronic illness and consequently poor health outcomes (Syed et al., 2013).

Service Provision (population ration/facilities)

The studies into access to HCS have traditionally focused on individual access but the community level access is also a current interest to researchers. Apprising the available number of medical practitioners as a key variable; the higher the ratio of doctors to community population was found to relate to the regularity of pre-scheduled visits for asthma care (Teach *et al.*, 2006). The other findings of Teach *et al.*, (2006) study regarding access at community level include neighbourhood racial and ethnic composition being linked to with significant ethnic disparities in access. More deprived areas were linked to lower access to care, these areas were defined by the percentage of the population classified as living in poverty, being unemployed adults, or adults without educational qualifications (Kirby and Kaneda, 2005).

Socio-organisational and geographic aspects of accessibility were suggested as important, but distinct elements of accessibility by Aday and Andersen (1974). Among the socio-organisational attributes are medical practitioner's gender, the fees charged and specialism possessed, whereas geographical related to the physical distance and time to receive the service. In the context of this thesis, the gender factor, from religion point of view, has direct relevance and high importance (Halligan, 2006).

The characteristics of the services provided are an insufficient factor to predict whether individuals will choose to access them (Aday and Andersen, 1974). Whilst understanding the underlying rationale of access and utilisation of health care, which represents some features of the link between supply and demand in terms of promoting good health practice and preserving the status of good health that are its prime objective, and that should underpin the level and quality provided, which also matches the demands of the population.

Another perspective on access and utilisation was offered by the USA Institute of Medicine, whose definition of access focused on the timely use of HCS, in order for the individual to accomplish the optimum outcome, which (Rogers *et al.*, 1999) described as receiving the appropriate service in the most suitable location and at the required time. Hence, these concepts added timeliness and geographical availability of services as important variables. This extended the idea of access and implied the need to evaluate service appropriateness and acceptability of the outcome, as perceived by provider and patients. In this framework, either

objective indicators of illness level or death, or subjective ones based on the patient's satisfaction levels with his/her perceived health status, could be used to determine levels of access. The community's demand for HCS can be related to variables such as, the percentage without health insurance, the support for introducing HCS, which may be interdependent with wealth levels, public hospital to population ratio and market dynamics (Davidson *et al.*, 2004; Andersen *et al.*, 2002) community level variables of this type have been linked to health care usage levels (Andersen *et al.*, 2002).

The barriers to health care access can arise from supplier and consumer (Jacobs *et al.*, 2012; Ensor and Cooper, 2004) on the patient/community side, factors influencing demand and ability to use are important, whereas supply-side determinants are inherent feature of the health care system that hinder service uptake by patients/groups. Consequently, the barriers to access must be identified separately, in order to formulate appropriate interventions. The inadequate levels of HCS supplied are frequently cited as a fundamental cause of poor health behaviour, especially in rural areas (McMurray and Clendon, 2011). PHC supply not only refers to the availability of practitioners but to staff attitude and interpersonal skills, and complex invoicing systems at hospitals; any of which can be poor hence reduce the quality and/or quantity of service available (Paphassarang *et al.*, 2002). The number of medical practitioner is inadequate in rural areas, and therefore access being limited. The suggested reason for inadequate supply was lack of opportunity for further education and growth, specialisation, inadequate facilities and supplies, lower salaries, and the gender of

health care providers (Rosenblatt *et al.*, 1998). Although all countries differ in the availability of health care providers, particularly poor availability has been identified in India, China and the KSA, for instance, whereas adequate supply was found in UK and Austria. The relative availability of HCS in rural and urban areas cannot therefore be generalised from a global perspective. However an in-depth analysis of the health distribution statistics found that countries of smaller geographical area, such as UK and Poland, have more balanced health distribution than those with larger geographical area such as China, India, KSA and USA. Inadequate health care distribution is not just dependent on geographical coverage but financial and personnel availability. A study in USA identified lack of health insurance but also the emigration of medical professionals from rural to urban areas (Rosenblatt *et al.*, 1998). The authors proposed that the doctor's specialism was a key factor in whether she/he continued to reside in a rural area rather than relocate to an urban one. The greater the degree of specialisation, the more likely the practitioner is to relocate from rural to urban environment. However, in some countries, such as Ethiopia health services have been decentralised so that there is a relative balance of employment available for medical practitioners in urban and rural locations but there are overall shortages in some specialisations. The examination of trends for doctors leaving their roles between 1995 and 2000, demonstrated that one-third of the leavers were based in rural areas and reasons given were the low salaries, lack of opportunity to obtain learning and poor career prospects; reduction in the number of health professionals below a certain threshold was directly related to poor patient (Yami *et al.*, 2011). Health care providers also face challenges that are unique to rural areas, firstly the

geographical areas cannot be easily broken down into equivalent zones having similar demand levels and this results in relative scarcity of PHCCs in such areas, potentially with inadequate and inexperienced staff (Guagliardo *et al.*, 2004; Hong *et al.*, 2006).

3.5.3 Need factors

General health status disease prevalence (chronic and infectious)

Need factors relates to health conditions that will lead individuals to seek health care. These can be perceived need i.e. the individual's perceptions of health and illness and of their views on the need for accessing HCS and actual need i.e. health status and requirements for further health care (Andersen, 2008). Pappa and Niakas (2006) in an assessment on health care needs and utilisation of public-private system in Athens found that health care need was the factor most strongly associated with all measures of utilisation of HCS. As patients have to pay for health care in Greece the results showed that women, the elderly and the poorest patients visited HCF allocated to them by their health insurance whereas the more educated and wealthier were more likely to seek private consultations. A study in British Colombia, Canada by Allan *et al.*, (2011) reported that in their sample of people aged 65 and over the most important and consistent predictors of access were those that measured health care need.

3.6 Summary

This chapter has presented the conceptual framework used for this study, which has relied on the social-behavioural approach and specifically Andersen's model. It has presented a discussion of the way in which access and utilisation have been conceptualised over time. The discussion shows that there is no single way in which access is defined and has varied from study to study over time and context. This discussion leads to the presentation of a definition of access and utilisation as it is applied in this thesis. 'Realized access is the actual use of services' (Andersen, 2008).

The models of health care access and utilisation are identified and the commonality between these models as well as the key shortcomings are outlined. The chapter has also discussed in detail the theoretical developments in Andersen's model and presents a discussion of the developments in Andersen's model from its initial version to the current iteration. A critique of the Andersen model and as well as reasons for deciding to use the model to conceptually frame this study is outlined, concluding that the model allows the exploration of the key requirements of addressing the contextual and individual related variables.

The literature on access and utilisation of HCS from developed and developing countries are presented under Andersen's predisposing, enabling and need factors variables. Similarities and differences between studies in developed and developing countries are presented highlighting the importance of cultural context when discussing access and utilisation of PHCS. The next chapter turns its

attention to presenting the methodology and specific methods used to carry out this study.

Chapter 4: Methodology

4.1 Introduction

Chapter three presented discussion on the way in which access and utilisation has been conceptualised and reported on how Andersen's model of health services use has been the key theoretical driver in this study. This chapter discusses the methodology that has underpinned the methods which form the basis of the research design for this research study. The selection of a mixed methods research design reflects the complexity of the study and the need to gather as much information on access and utilisation of PHCS in urban and rural areas of Riyadh province to add to the limited information currently available and is grounded. The research questions, aim and objectives of the study have been developed to address the gap in the literature on access and utilisation of PHC in the KSA context and in response to evidence highlighting the increasing inequalities in access and utilisation of PHC between urban and rural areas. The findings from this study provide empirical evidence for understanding the barriers and facilitators to access and utilisation of PHC in the KSA.

This chapter continues below with a review of the research questions, aim and objectives of the study which is followed by a critical justification for choosing a mixed methods approach grounded in a pragmatic philosophy and shows the appropriateness of this approach for understanding the factors which influence access and utilisation of PHCS in urban and rural areas of Riyadh province. The chapter then turns its attention to presenting information on the method, sample

selection, data collection and data analysis for each objective. Discussion of the study methods also highlights the nuances of carrying out research in the KSA before moving onto a discussion on ethical considerations.

4.2 The research questions, aim and objectives of the study

Research questions:

Research question 1: how have PHCS evolved in KSA from 2008-2013 and what are the views of the MOH policy makers and service providers on the barriers and facilitators to patients accessing and utilising PHCS in Riyadh province KSA?

Research question 2: what are the barriers and facilitators encountered by patients in rural and urban areas when accessing and utilising PHCS in Riyadh province, KSA?

Aim:

To examine the barriers and facilitators influencing the access and utilisation of PHCS in urban and rural areas of Riyadh province of the KSA.

Objectives:

- Review of the evolution of PHCS in rural and urban areas of Riyadh province 2008-2013;
- Ascertain the perspectives of MOH policy makers and service providers on recent policy and planning developments in PHC and the barriers and

facilitators to access and utilisation of PHCS in rural and urban areas of Riyadh province;

- Understanding patients views on the barriers and facilitators from the accessing and utilising PHCS in rural and urban areas of Riyadh province.

4.3 A mixed methods research methodology

Chapter 3 (section 3.2) has discussed the conceptual framework that has driven this study showing that this research is located within the area of HSR focusing specifically on PHC. A mixed methods approach with a pragmatic philosophical stance ('using whatever method works') was chosen as being the most appropriate to answering the research questions, and meeting the aim and objectives of the study (Johnson and Onwuegbuzie, 2004). The mixed methods approach is increasingly used within HSR and reflects a move away from the traditional quantitative (positivist philosophy) emphasis (Creswell, 2009; Sokoloski, 1994) and the recognition of the importance of qualitative (interpretivist philosophy) approaches. It has been referred to as the third 'methodological movement' (Creswell and Clark, 2011). Johnson and Onwuegbuzie (2004) have discussed the mixed methods paradigm¹² and argued that whilst it does not currently provide a

¹² I am using paradigm as Kuhn (1970) used it. For Kuhn a paradigm was based on reference to his analysis of revolutions in science. Drawing on Kuhn's work Bryman describes a paradigm is 'a cluster of beliefs and dictates which for scientists in a particular discipline influence what should be studied, how research should be done, [and] how results should be interpreted' (Bryman, 1988 pg.4). New paradigms emerged in response to a crisis in a discipline which results in a revolution

complete solution to the quantitative and qualitative chasm it does present an option to use the best of the traditional methodologies. The mixed methods research paradigm combines these two paradigms (Feilzer, 2010; Doyle, *et al.*, 2009; Denscombe, 2008; Morgan, 2007) and the increasing use of the mixed methods approach does contribute to amend to the traditional chasm between the qualitative and quantitative research paradigms (Edmonds and Kennedy, 2012; Creswell and Clark, 2011; Brannen, 2005).

Pragmatism is seen as a natural philosophical partner for mixed methods research and provides an important framework for the approach and methods used in this study (Onwuegbuzie and Leech, 2005; Johnson and Onwuegbuzie, 2004). Johnson and Onwuegbuzie (2004) argue that pragmatism does not see quantitative methods and superior to qualitative or vice versa but recognises that both have value in advancing knowledge and thus rejects the view that quantitative and qualitative methods are not compatible and instead allows both to be combined into one study. It is expansive rather than restrictive and pluralistic in its approach. In other words mixed methods ‘moves past the paradigm wars by offering a logical practical alternative’ answering the research question and meeting the aim and objectives of a study (Johnson and Onwuegbuzie 2004, p17).

(Bryman, 2008). Bryman (1988) was one of the early proponents challenging arguments that quantitative and qualitative research should not be integrated which circulated among researcher during the 1970s and 1980s.

Although there is a great deal of this literature on the barriers and facilitators to accessing PHCS, much of this is based on studies carried out in western countries for example; the UK (Doyle *et al.*, 2009; Bäärnhielm and Ekblad, 2000), USA (Hines-Martin *et al.*, 2003), Australia (Minas *et al.*, 2007) and Canada (Prus *et al.*, 2010). Many empirical studies relating to access and utilisation of health care have used quantitative survey methods to collect data (Cheung *et al.*, 2012; Lamarche *et al.*, 2010). The qualitative studies in this area tend to focus on the barriers and facilitators facing marginalised groups accessing HCS (Bäärnhielm and Ekblad, 2000; Sokoloski, 1994; Morgan, 1996; Lipton *et al.*, 1998; Farmer *et al.*, 2006). A selection of mixed methods studies that have looked at access and utilisation of HCS particularly focusing on rural areas or rural and urban comparisons were used to influence the research design of this study (Salinas *et al.*, 2010).

There is however a dearth of empirical research carried out in the KSA on barriers and facilitators to accessing PHCS. Overall there is poor information available in the public domain on the way in which HCS have developed in KSA. Therefore, the first objective of this study was to review the evolution of PHCS in rural and urban areas of Riyadh province 2008-2013 which provide an opportunity to understand the development and delivery of PHC. The majority of the information that is already available has focused on quantitative methods and producing descriptive statistics indicating the available services (type of service provider), ‘manpower’ (e.g. general practitioner (GP), nurse and pharmacist) and numbers of

patients using service. Whilst this type of generalisable data is important to provide a broad picture of factors impacting on accessing PHCS (objective two) in the KSA, this research also wanted to obtain in-depth information on the ‘reality’ of service providers experiences of working in the context of the PHCCs/setting (objective three). Grounding the research design within the mixed methods paradigm therefore allowed for the collection a large amount of generalisable data and in-depth information which helped to understand the barriers and facilitators to accessing PHCS in the KSA context in a hitherto under researched area.

4.4 A convergent parallel mixed methods research design

This study used a convergent parallel mixed methods design was used as it was seen as the most appropriate for answering the study research questions¹³. Creswell and Clark, (2011) describe a convergent parallel mixed methods design as ‘when the researcher collects and analyses both quantitative and qualitative data during the same phase of the research process and then merges the two sets of results into the overall interpretation’ (pg.77).

¹³ Creswell and Clark (2011) recommend six major mixed methods research designs as possible frameworks for research design.

Why use the convergent mixed methods research design

A convergent parallel mixed methods research design presented an opportunity to make the study manageable in terms of data collection and discussion on the findings, (Creswell and Clark, 2011) also allowed for the triangulation of findings (Denzin, 2012), (using two different methods to understand different perspectives on one topic) and to collect data during the same phase of the research¹⁴. Morgan (1996) has also stipulated that combining quantitative and qualitative data is a more profound way of triangulation and not simply aimed at validating the research but also for a deep and wide knowledge of the subject. Qualitative data enables a deep understanding into the reasons underpinning the quantitative data, thus the two approaches are complimentary (Saunders *et al.*, 2009).

Another advantage of this design is that it allows the research to benefit from the strengths of qualitative and quantitative methods without valuing one over the other. For example in the case of quantitative research, testing and validating existing theories, testing hypotheses, generalising research results, making quantitative predictions, and assessing cause and effect relationships, are relatively quick. In addition quantitative methods provide precise quantitative numerical data, are less time consuming, results are relatively independent of the

¹⁴The intention is not to reduce mixed methods to triangulation. Please see Denzin (2012) for a discussion on conceptualising mixed methods research.

researcher (for example, statistical significance), and the method is useful for studying large numbers of people (Johnson and Onwuegbuzie, 2004). Qualitative methods allow for the collection of in-depth information and explanation for the topic under investigation. The mixed methods approach thus allows for the comparison and corroboration of the two sets of data and synthesising the results to obtain a complete picture in order to answer the research question (Creswell and Clark, 2011).

The mixed methods approach has come under criticism for two closely related reasons. Firstly, the argument that research methods have specific epistemologies (the embedded methods argument) and secondly, that quantitative and qualitative research are different paradigms (the paradigm argument) (Bryman *et al.*, 2008). These are discussed in more detail below

The embedded methods argument: postulates that the decision to use a particular method in research is not simply about how to collect the data, for example focus groups, but based on a commitment to a particular epistemological position which in the case of qualitative research is interpretivism. This is therefore inconsistent with quantitative research which is positivist. This perspective has resulted in discussion of the inconsistency within mixed methods research since the 1970s (Bryman *et al.*, 2008) with those opposed to mixed methods arguing that quantitative and qualitative methods cannot be integrated successfully.

The paradigm argument: sees quantitative and qualitative research as paradigms which are inextricably linked to an epistemological position 'thus when researchers combine participant observation with a questionnaire, they are not really combining quantitative and qualitative research, since paradigms are incommensurable-that is that they are incompatible: the integration is only at a superficial level and within a single paradigm' (Bryman *et al.*, 2008, pg.604).

Bryman (2008) continues to argue that the problem with these criticisms of mixed methods research are based on the relationship between epistemology and method which are difficult to disentangle in social research and also the question of whether quantitative and qualitative approaches are in fact paradigms.

As discussed above (section 4.3) pragmatism allows the researcher to move away from the idea of fixed epistemologies and provides a philosophical partner for the mixed methods approach and designing and carrying out mixed methods research (Johnson and Onwuegbuzie, 2004).

Figure 4.1 below illustrates the convergent mixed methods research design for this study. Qualitative data to answer research question 1: how have PHCS evolved in KSA from 2008-2013 and what are the views of the MOH policy makers and service providers on the barriers and facilitators to patients accessing and utilising PHCS in Riyadh province KSA? And quantitative data was collected to answer research question 2: what are the barriers and facilitators encountered by patients in rural and urban areas when accessing and utilising PHCS in Riyadh province,

KSA? Data collection for both arms of the study took place concurrently (although the quantitative data collection took a lot longer, see (section 4.5.3.) for an explanation of why this was the case). The two sets of data were analysed separately (see Chapter 5 for qualitative findings and Chapter 6 for the quantitative results). The findings and results are discussed in relation to the objectives in Chapter 7. Chapter 7 discusses how the findings from the qualitative and quantitative arms of the research. Chapter 8 discusses converge, diverge of the two results and relate to each other to produce a complete understanding (Creswell and Clark, 2011) of the factors influencing access and utilisation of PHCS in urban and rural areas of Riyadh province of the KSA.

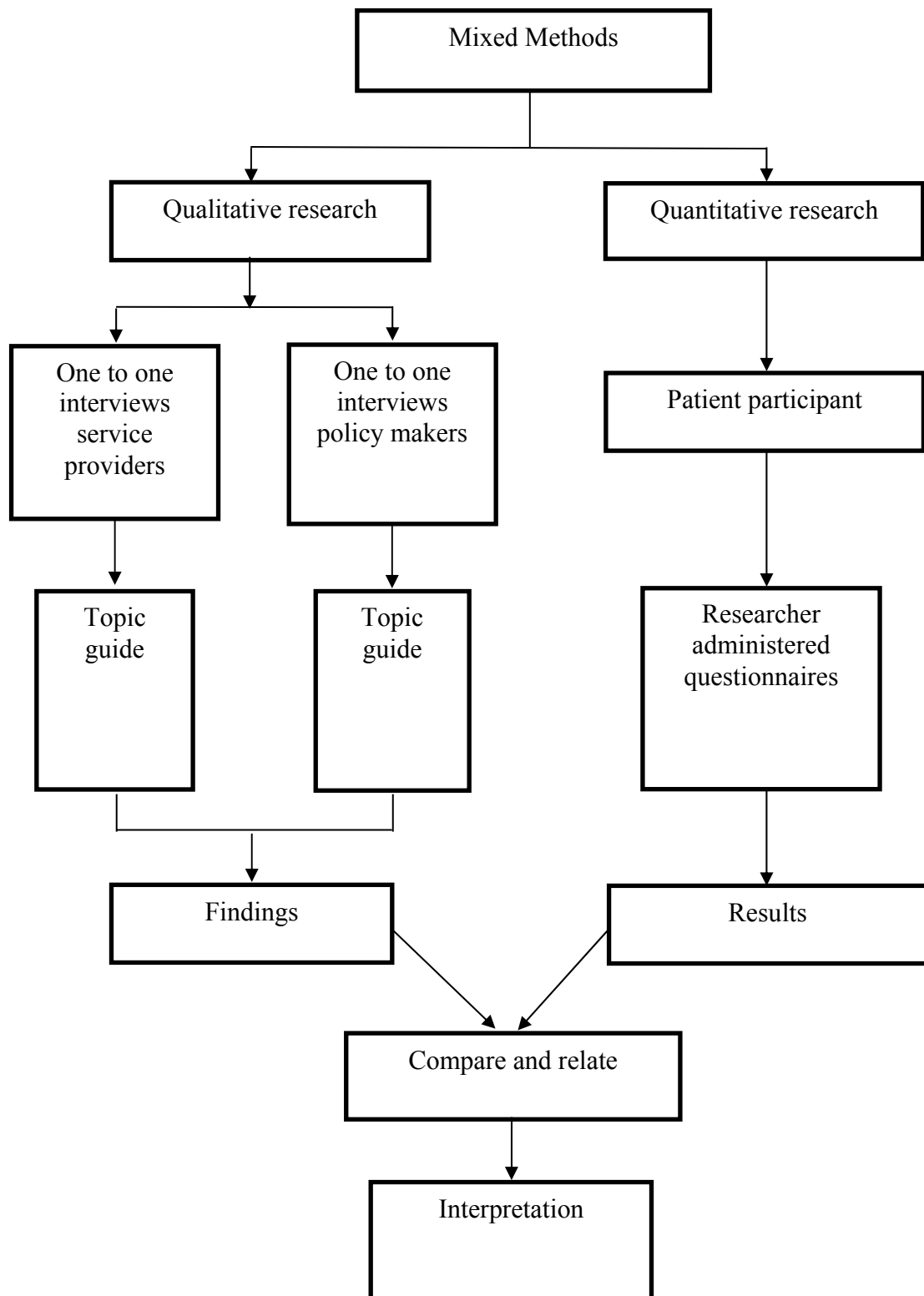


Figure 4.1 Diagram showing the study design: a convergent parallel mixed methods research design.

A mixed methods approach was particularly suited to meeting the aims and objectives of the study and answering the research questions because:

There is a dearth of information and research explaining the evolution of PHCS in the KSA. Much of the available evidence is not in the public domain and the information available is often inconsistent. Thus a review of the evolution of PHCS in rural and urban areas of Riyadh province 2008-2013 was seen as an essential first step towards understanding the context of access and utilisation of PHCS in the KSA. The period selected for the review (2008-2013) reflects the availability of information from the MOH. Personal communication with MOH policy makers during early stages of designing this study highlighted that information was collected before this period but in an ad hoc way and was not available for the research (problems of data collection for this objective are discussed in detail in section 4.5.1).

Ascertaining the perspectives of MOH policy makers and service providers on the access and utilisation of PHCS in rural and urban areas of Riyadh province was seen necessary, as there is limited information or research on how PHCS are planned and delivered in the KSA. Key MOH and service providers were therefore essential to providing in-depth information in an area where there is very little existing documented information.

There is very little evidence identifying the barriers and facilitators from the patient perspective to accessing PHCS in rural and urban areas of Riyadh province (objective three) therefore it was essential to gather substantial generalisable information on patient views.

4.5 Research methods

This section presents the specific methods (method, sample selection/recruitment, data collection and data analysis) as appropriate, used for meeting each of the research objectives. It also discusses some of the challenges experienced when carrying out the data collection for each objective.

4.5.1 Objective one: Review of the evolution of PHCS in rural and urban areas of Riyadh province 2008-2013

Method

As discussed above (see section 4.4) there is little information and research explaining the evolution of PHCS in the KSA. A review of the evolution of how PHCS in the KSA (and Riyadh) have developed from 2008-2013 was undertaken by accessing MOH Health Statistics Annual Book, the MOH data base which is available on the MOH website (<http://www.moh.gov.sa/en/Pages/Default.aspx>), some key research articles (which discussed the development of health care in

KSA (Almalki *et al.*, 2011a; Al-Ahmadi and Roland, 2005; Al Yousuf *et al.*, 2002) and four PhD thesis that have been based on understanding HCS and PHCS in KSA¹⁵(see appendix 4).

Data collection

Key PHC policy and planning documents from 2008-2012 were obtained by carrying out an internet search using key terms and by snowballing through employment networks (the researcher is an employee of the MOH in Riyadh) as well as asking the key service providers interviewed for objective two for relevant materials that were not available in the public domain.

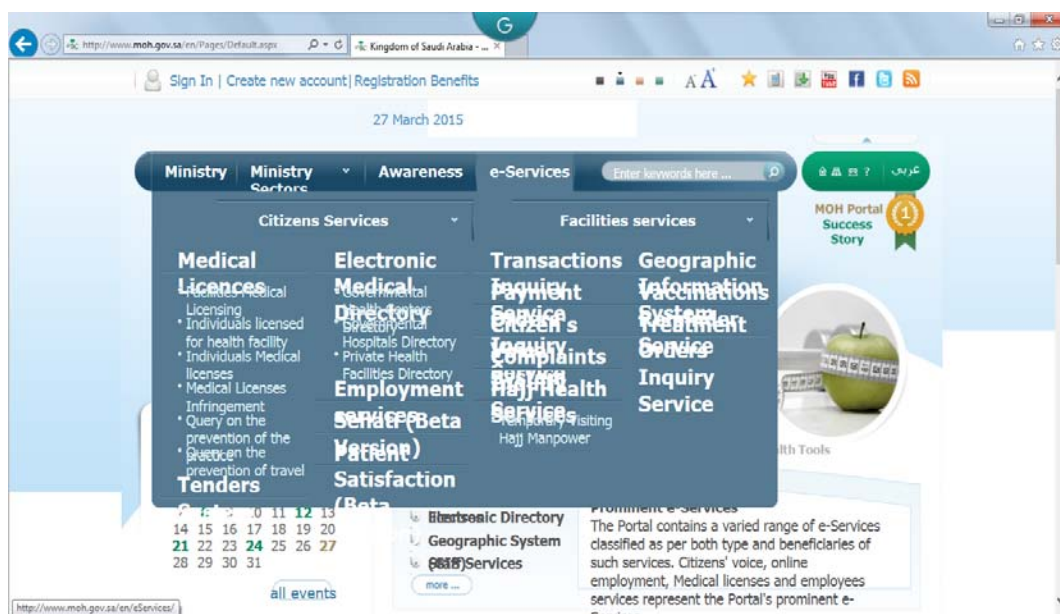
The challenges of data collection

There were a number of challenges to obtaining policy and planning documentation to understand the evolution of PHC in KSA.

Problems with the MOH website: the organisation and the presentation of the MOH website is poor overall. There were problems with reading the information on the website which helps navigate the user through the information. In many cases text was overlapping text and therefore it was very difficult to navigate

¹⁵A number of PhD thesis were reviewed that have researched access and utilisation of PHCS in KSA. All of these thesis had sections on the evolution of health care and some on HCS. They were accessed through websites. See (appendix 4).

through the website to extract information required including details of key MOH staff to contact for support with information to meet this objective. Once relevant information had been identified and accessed, often the links were empty or information had been removed and was therefore not available. Navigating the MOH website and extracting information was consequently a lengthy, laborious and generally unsatisfactory exercise. The screen shot below give example of overlapping text and the difficulties of reading the information on the website.



Lack of information in the public domain: there are very few policy and planning documents in the public domain. The period 2006-2013; the first look at the MOH website showed that the MOH Health Statistics Annual Book should be available for this period. However when attempts were made to access the documents the information was unavailable i.e. the link was there but the information was unavailable. The only MOH Health Statistics Annual Book that were accessible were those for 2012 and 2013.

Personal communication with the Development and Quality Department revealed that the MOH only had copy of the Health Statistics Annual Book that was available from 2008-2013, i.e. Statistics Manuals for 2006 (or before) and 2007 were not available.

Busy MOH staff: key service providers promised documents but were often too busy to email relevant reports. Despite numerous communications (email and telephone calls) by the researcher (and research assistant) some of this documentation was not forthcoming. (Appendix 1) shows details of the number of visits made to the MOH to access information to meet this objective.

Incorrect and outdated information: some of the information in the MOH Health Statistics Annual Book was incorrect and during visits to the Development and Quality Department¹⁶ identified where this was the case and searched for updated material manually that the correct information could be included in this study. It was also difficult to compare Health Statistics Annual Book over the selected period. The reason for this was that the way the data was collected varied over the chosen years. For example in 2008 health statistics were provided for fewer provinces in the KSA than in 2013. Consequently some secondary re-calculations

¹⁶All visits to the MOH were made accompanied by the male researcher. All negotiation with MOH staff was initiated by the male research assistant even though the researcher is an employee of the MOH.

had to be carried out to ensure that the data was comparable and meaningful from one year to the other in the selected period. Another problem was that the available MOH documents quickly became out of date because of the rapidly evolving PHCS developments in the KSA.

Sparse evidence base: as well as the MOH information searches were carried out, studies that had been carried out and have reviewed aspects on the health care system in KSA. There were very few of these and what was available was dated. One of the most recent articles available was by Almalki *et al.*, (2011a). Please see (Appendix 4) for details of PhD Thesis that were reviewed for this objective.

Using the information

The information collected to meet objective one is presented in chapter two and has been essential in helping the researcher come to the definition of rural and urban used for the study, selecting the PHCCs to include for data collection for the patient questionnaire survey (objective three) and identifying key MOH policy makers for one to one in-depth interviews (objective two) as well as contextualising the data and findings from objectives two and three.

4.5.2 Objective two: Ascertain the perspectives of MOH policy makers and service providers on recent policy and planning developments in PHC and the barriers and facilitators to access and utilisation of PHCS in rural and urban areas of Riyadh province

Method

This objective was met by carrying out in-depth one to one interviews with service providers at the PHCCs and key MOH individuals responsible for the planning and delivery of PHC using semi-structured topic guides (appendix 5 and 6 for the topic guide in English and Arabic). Qualitative methods such as one to one interviews (and focus groups) have been increasingly used in health care type empirical studies to capture service provider's views (Moffatt *et al.*, 2006). There is a great deal of evidence highlighting the contributions qualitative research has made to the study of health and illness (Moffatt *et al.*, 2006). There is a dearth of evidence on service provider perspectives on access and utilisation of HCS in rural and urban areas of Riyadh province and therefore the interview method was seen as an appropriate strategy to generate detailed description and explanations for the factors impacting on access and utilisation of PHCS from the service provider's perspective on this under researched area in the KSA.

The Sample

Selecting the service providers from the PHCCs

Service providers were purposively selected for the semi-structured one to one interviews from the selected ten PHCCs (five urban and five rural)¹⁷. To ensure that all service provider roles at the PHCC were represented, practice manger, general practitioners and nurses were recruited into the study. These are the minimum number (and role) of service providers ('manpower') available at the PHCCs. The final service provider sample size was determined by the principle of saturation (Sandelowski, 1995) and generated detailed/rich information from which we identified emergent themes and similarities and differences between service provider views on the factors impacting on access and utilisation of PHCS. Appendix 7 presents the description of the final service provider and MOH policy maker's sample.

Selecting the MOH policy makers

After reviewing the different job roles/responsibilities of employees at MOH and snowballing through existing professional networks (the researcher is an employee of MOH) ¹⁸three key policy makers from the MOH were recruited into

¹⁷ Purposive (purposeful) sampling refers to intentionally selecting and recruiting research participants based on knowledge of the sample and based on the objectives of the study (Creswell and Clark, 2011).

¹⁸The KSA has thirteen provinces and each province has a MOH employee responsible for planning and delivering of PHCS in its regions (see Chapter two for further detail).

the study. These three (one for Riyadh province and two for KSA as a whole) key policy makers were the total number of MOH employees responsible for policy and planning in relation to PHCS in Riyadh province and the KSA. The specific job roles for the key policy makers from the MOH is not presented to protect anonymity of participants as the sample is so small and therefore easily identifiable.

The practice managers were contacted by the research assistant to discuss support with access and recruitment the service providers and patient participants at each PHCC. MOH policy makers were also contacted by the research assistant to arrange a mutually convenient time for the researcher and research assistant to visit service providers and MOH policy makers to carry out the semi-structured one to one interviews

Data collection

A total of 33 one to one interviews were carried out with service providers (practice managers, GPs and nurses) at the PHCCs and with three MOH policy makers using a topic guide. The semi-structured one to one interviews took place during the first fieldwork trip (17 September - 5 November 2013) and were carried out in the language preferred by participants which was either Arabic or English. Overall Arabic was the preferred language of the Saudi nationals while non-Saudis opted for the interviews to be carried out in English. The interview participants were given an information sheet and a consent form (which were written in English and Arabic). PHCC service providers and the MOH policy

makers (as is the patient participants) were not willing to sign the consent forms and therefore verbal consent was taken using the audio-recording equipment being used to document the interviews.¹⁹

The challenges of data collection

The challenges of researching in a gender segregated society are discussed in (section 4.5.3) below in relation to the quantitative data collection. There were additional challenges related to the qualitative arm of this study. There was very low visibility of women in the MOH buildings and all negotiations leading up to the actual interview with MOH policy makers were carried out by the research assistant. This involved the researcher (and her supervisor on one occasion) waiting around for nearly three hours until access was granted. Once the interview commenced, the MOH policy makers appeared to be comfortable talking to a female researcher but often the interviews were very rushed. This may be due to the time commitments of the policy makers and the timing of the interviews during the preparations for Hajj (pilgrimage). All interviews with the MOH key policy makers took place with the research assistant (and in one case with the research supervisor) present.

¹⁹The UOB ethics committee and the MOH ethics committee were informed about the issues related to participants refusing written consent and audio-recording verbal consent was approved.

The one to one interviews with the male service providers had to take place with the male research assistant present. Although the researcher was veiled (which introduced the study and explained that she would be conducting the interview but the majority of the Saudi practice managers directed their responses to the male research assistant. As was the case with a female researcher administering the questionnaire to male participants, the gender dynamic during interviews may have also prevented full and frank discussion between the researcher and practice managers.

Most of the other male service provider (GPs) were non-Saudis (but all Muslim) and also appeared to be more comfortable interacting with the female researcher.²⁰ Whilst the gender of the researcher impacted on the interview process with the male Saudi practice managers and nurses in particular, the interaction with the GPs and nurses was affected by the ‘insider’ status of the researcher, in other words her Saudi nationality and her MOH employee status may have impacted on the discussion between the researcher and the researched (Dwyer and Buckle, 2009). In this study then the researcher was both an insider and outsider. The impact of the researcher insider-outsider status is presented in detail in section 4.8.3 below.

²⁰ The male research assistant was not present during the one to one interviews with the female service providers.

The topic guides

The one to one interviews with the PHCC service providers and the MOH key policy makers took place using topic guides (see appendix 5 and 6). The topic guides were informed by the research questions, aims and objectives of the study as well as the literature on access and utilisation of PHC. The topic guides were designed to include some of the themes in the questionnaires to ensure some service provider and patient responses could be converged, accessing PHCC in urban and rural areas of Riyadh and to apply and understand the findings in relation to Andersen's model.

The topic guides for the MOH policy makers and PHCC service providers covered the following key themes.

MOH policy makers:

- Biographical information which requested information on length of service and responsibilities.
- Health care system planning and delivery which focussed in health care system organisation, management and accountability, service delivery, involving patients and families in service planning, health issues in the KSA.
- PHCS which focused on current planning priorities, challenges faced in delivering PHCS, location of PHCCs.

- Views on the barriers and facilitators to the utilisation of PHCS and future developments in PHCS.
- Requests for documents.

Service providers (PHCC practice managers, GPs and nurses)

- Biographical information including information on present role in the PHCC, perceptions of location of the PHCC i.e. rural or urban location, organisational structure, management practices and accountability.
- Availability of services at the PHCC which focussed on what services are available, which services patients use and other services that should be provided, views on opening hours, waiting times, referral routes, main health issues and challenges of their role.
- Views on barriers and facilitators to utilisation of services such as knowledge of services, differences between groups, impact of health behaviour, religious and cultural beliefs and patient satisfaction.
- Service improvement which requested views on how services could be made more accessible/acceptable to the community, and the main health conditions that should be addresses.
- Closing which discussed knowledge of new developments in PHCS planning and development.

The English topic guides in (appendix 5 and 6) are coded as shown in figure 4.2 and 4.3 to show the predisposing, enabling and need factors that have been included as per Andersen's model to understand the barriers and facilitators to accessing PHCC in rural and urban areas of Riyadh province, KSA.

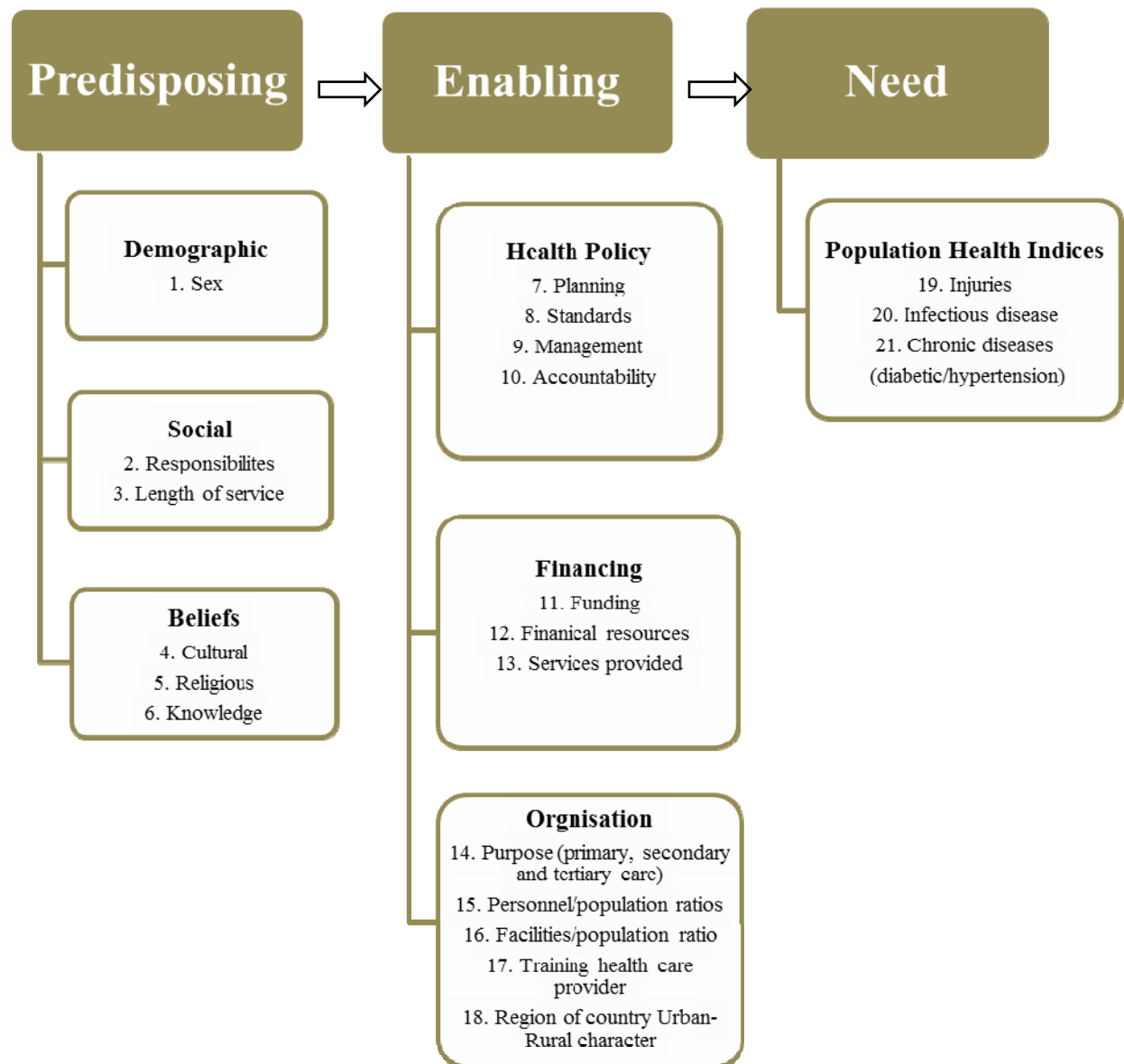


Figure 4.2 MOH policy maker's topic guide applied to Andersen contextual determinants (predisposing, enabling and need factors).

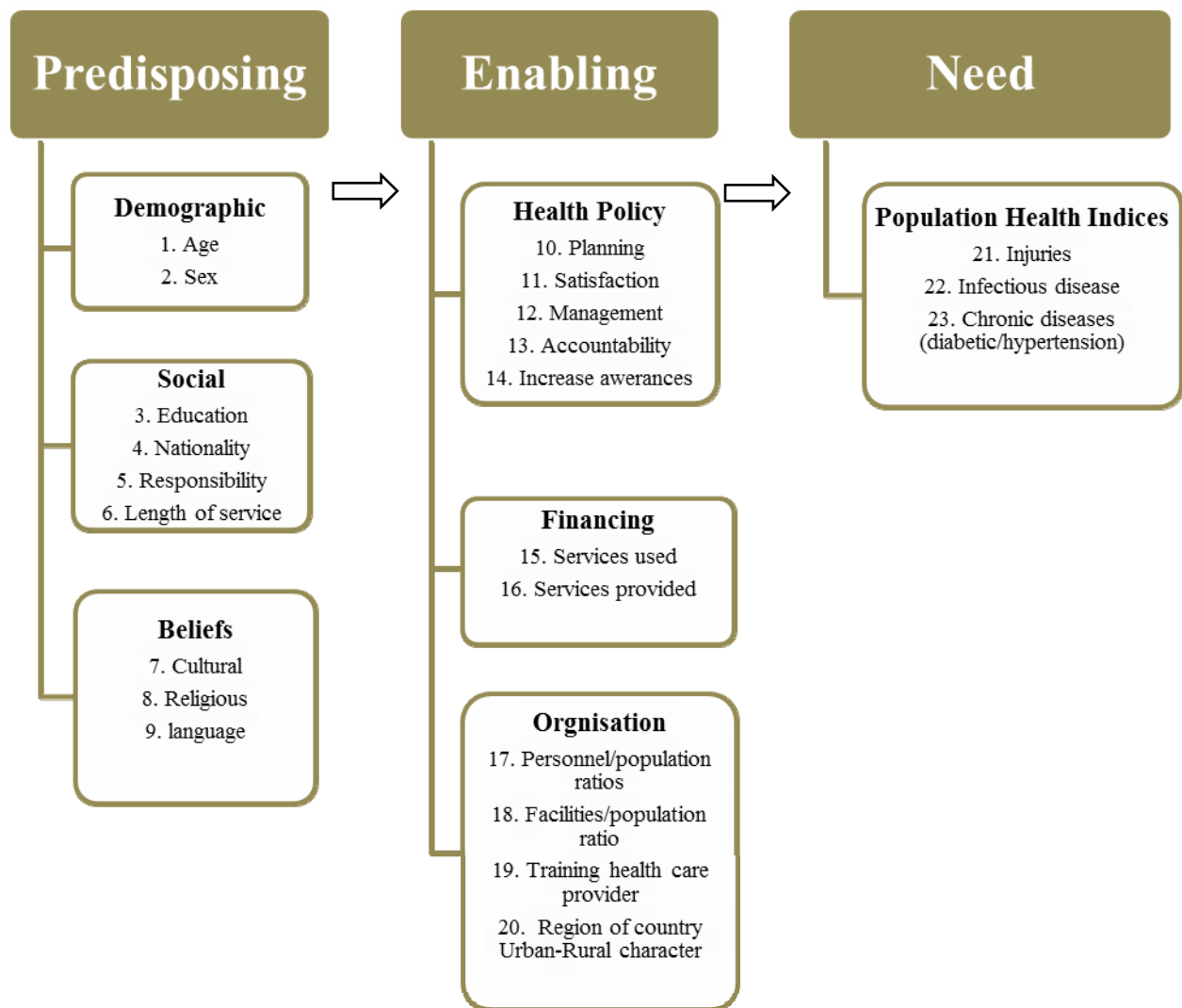


Figure 4.3 Service providers' topic guide applied to Andersen contextual determinants (predisposing, enabling and need factors).

Topic guide for PHCC service providers and for MOH policy makers

The topic guides were translated into Arabic to ensure that there was linguistic compatibility in the way in which the discussions took place. There were some difficulties trying to translate Arabic into English without losing the meaning of what participants were being asked. Rather than a literal translation the researcher ensured that the meaning of the English questions was not lost when translating the topic guide into Arabic (Krefting, 1991). Having a topic guide translated into Arabic meant that the researcher was able to conduct the one to one interviews without having to carry out 'on the spot' translation which may have impacted on the meaning of what was being asked. Where participants did not speak Arabic the English topic guides were used.

Piloting the topic guide/conducting a pilot interview

The topic guides were used to run a mock interview with one of the research supervisors and a volunteer participant (a Saudi student studying in the UK) with the intention of gaining training on how to conduct an interview using the topic guide. The exercise helped to ensure that all the questions were relevant to the study (that there was no duplications), understandable to the participants and that transition from one section/theme to the next was possible with ease. The mock interview also tested the length of the interview and familiarity with the topic

guide. Overall this exercise helped build confidence for running the interviews in the field.²¹ Some changes were made to the topic guide after piloting the topic guide/conducting a pilot interview. Some questions were reorganised as probes. This reduced the length of the topic guide and the length of the interview.

Qualitative data analysis

The framework approach was used to analyse the qualitative data from the one to one interviews with the PHCC service providers and the MOH policy makers. The Framework approach consists of five stages: familiarisation with the data, generating initial codes, followed by identifying themes/sub-themes, then constructing thematic networks and lastly, integrating and interpreting the data (Al-Ahmadi and Roland, 2005). A particularly useful aspect of framework analysis is that it allows a comparison by themes and across cases and allowed the summary of key features of the data and is not tied to a particular level of interpretation and can consequently be used within the pragmatic world view (Feilzer, 2010; Denscombe, 2008). Appendix 8 and 9 presented the MOH policy maker and service provider coding frame developed and applied to the transcripts.²²

²¹ Information from the qualitative piloting exercise was not used in the study.

²² The researcher made the decision not to use computer assistance packages such as NVIVO 10 to organise my data because I had a relatively small data set (Creswell, 2009). I did receive training but decided that I wanted to carry out the exercise by hand as this was the first time I have attempted qualitative analysis and therefore doing it manually may help me develop a deeper

4.5.3 Objective three: Understanding patients views on the barriers and facilitators from the accessing and utilising PHCS in rural and urban areas of Riyadh province

Method

A questionnaire survey was carried out to identify the barriers and facilitators to accessing PHCS in rural and urban areas of Riyadh province. An adapted version of the NHS National Survey Programme: PCT Question bank 2008 v6 dated 27th November 2007 was used²³. Permission to use and adapt the questionnaire was obtained from the Quality Care Commission (further detail is provided below). Questionnaire surveys have been successfully used with patients in previous research (Jenkinson *et al.*, 2002a; Jenkinson *et al.*, 2002b; Netzer *et al.*, 1999; Rosenthal and Shannon, 1997; McHorney and Tarlov, 1995; Brazier *et al.*, 1992).

understanding of the stages of framework analysis before trying to become competent in using the software packages.

²³A number of questionnaires were reviewed for their suitability for use in this study. These included Public Satisfaction with the NHS and its Services, Maternity Service Survey 2012, Teenager's Views on their Health and Local Health Services and Community Mental Health Survey amongst others. The questionnaires reviewed were either based on satisfaction or views on specific services both of which were unsuitable for answering the research question and meeting the aim and objectives of the study. The GP Patient Survey was also reviewed and this was a potentially suitable questionnaire but was limited to services provided by GPs in the UK and less relevant to the way in which PHC is organised in the KSA e.g. dentistry and laboratory services are provided by PHCCs in the KSA. The NHS National Survey Programme: PCT Question bank 2008 v6 dated 27th November 2007 more relevant to the organisation of services in the KSA and its focus was views on local health services rather than those specifically provided by the PHCC.

The sample

Selecting the Riyadh province and rural and urban areas

The Riyadh province of Saudi Arabia was selected as the location for this study for a number of reasons. Firstly, the Riyadh province has a good, uniform coverage of PHCCs in urban and rural areas, compared to other parts of the country. Secondly, it was easy to organise the study, due to the geographical proximity of the study sites to the researcher who was based (and is an employee of the MOH) in MOH in Riyadh city. The Riyadh province consists of twenty governorates (areas, districts or city) and these are shown in Figure 4.4 below. Larger governorates have a high population density and therefore have more than one PHCC. The number of PHCCs is increasing as the city develops and new localities emerge.

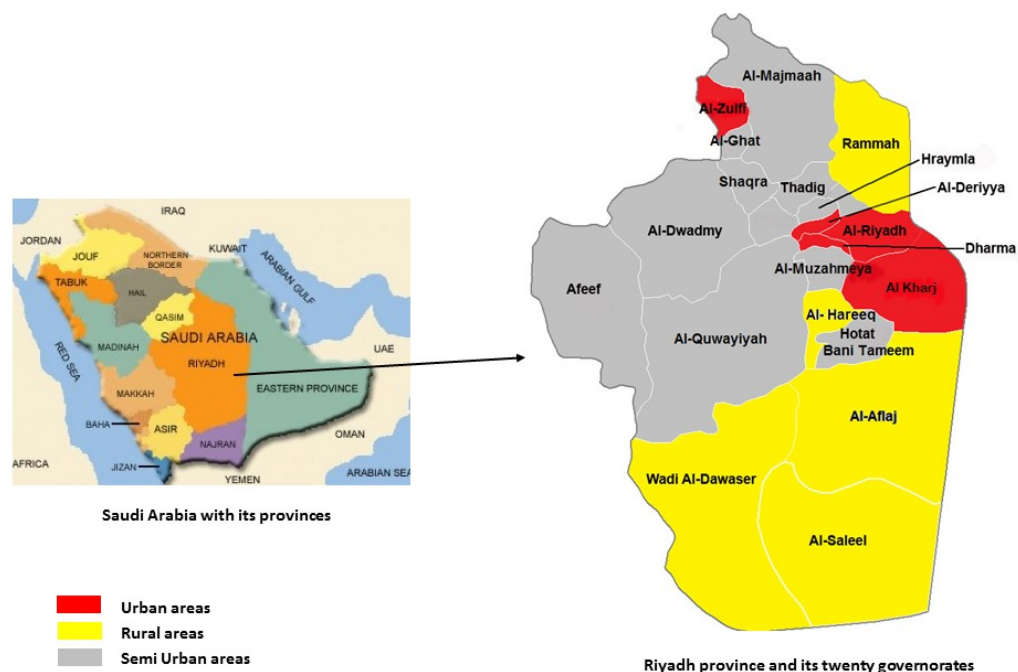


Figure 4.4 Study site for assessing the access and utilisation of PHCS in Riyadh province of Saudi Arabia.

The twenty governorates in Riyadh province are not classified as either urban or rural based on any officially published statistics/record. Hence it was proposed that the top quartile governorates will be classified as urban and the lower quartile as rural based on the population density (as discussed in Chapter 2, section 2.3.5) for the purposes of this study. The population density of each governorate was calculated by dividing the total population by the area of the corresponding governorate and the governorates were then arranged in a descending order of population density to identify the “urban” (top quartile) and the “rural” (bottom quartile) governorates. Table 4.1 below shows the figures for the population density for the twenty governorates in Riyadh province.

Table 4.1 Population density of Riyadh province of Saudi Arabia (MOI).

Governorate	Area/km²	Population	Population density/km²	Rural/Urban
Al-Riyadh	1800	5188286	2882.38	Urban
Al-Deriyya	2020	73668	36.47	
Al-Kharj	19790	376325	19.02	
Al-Zulfi	5540	69294	12.51	
Dharma	2060	24429	11.86	
Al-Muzahmeya	3580	39865	11.14	Semi urban
Hraymla	1480	15324	10.35	
Shaqra	4110	40541	9.86	
Al-Dwadmy	30580	217305	7.11	
Hotat Bani Tameem	7350	43300	5.89	
Al-Ghat	2690	14642	5.44	
Al-Majmaah	30000	133285	4.44	
Thadig	5600	17165	3.07	
Afeef	26810	77978	2.91	
Al-Quwayiyah	50580	126161	2.49	
Al-Hareeq	6790	14750	2.17	Rural
Wadi Al-Dawaser	48900	106152	2.17	
Rammah	15900	28055	1.76	
Al-Aflaj	54120	68201	1.26	
Al-Saleel	42420	36383	0.86	

Selecting the PHCCs

Chapter two (section 2.3.5) has already discussed how a classification of rural urban was derived at for the purposes of this study. Five rural and five urban PHCCs in Riyadh province were selected based on the classification of the population density of the governorates as discussed above (see table 4.1). The

selection of the PHCCs in these selected rural and urban governorates for the purpose of this study (data collection sites) was based on the MOH classification of services provided by the PHCCs. The MOH classifies its PHCCs based on the range of services provided (see appendix 2).

MOH classifies PHCCs that have a laboratory, dentistry and residential facilities for the GP and a nurse working at the PHC with the identifier B3. After reviewing the MOH classifications for the PHCCs it was observed that the most numerous categories of PHCCs were B3. To ensure like to like comparison (in terms of services offered) between rural and urban governorates, the B3 PHCCs serving the largest population in each governorate was identified as the PHC sites for inclusion in this study (see table 4.2 below).

Table 4.2 The PHCCs selected for the study (data collection sites) showing population density.

Region	PHCC	Population density	Governorate	Category
Urban	A	2077	Dharma	B3
	E	10536	Al-Zulfi	B3
	B	6065	Al-Deriyya	B3
	D	8000	Al-Riyadh	B3
	J	11368	Al-Kharj	B3
Rural	H	3980	Al-Aflaj	B3
	F	2599	Al-Hareeq	B3
	G	11495	Wadi Al-Dawaser	B3
	I	6614	Al-Saleel	B3
	C	1033	Rammah	B3

The patient participant sample size

Assuming ‘access and utilisation of PHCCs among the patients (Yes/No) as the main outcome variable of this study, the sample size was calculated by using the following formulae:

$$(1) n = Z_{\alpha}^2 P(1-P)/d^2$$

Where n= required sample size, $Z_{\alpha} = 1.96$ (standard normal deviate),

P = proportion of patients having access and utilising the PHC, and d= precision of estimate.

By considering 50% of the patients as having access and utilising their PHCCs both at urban and rural regions of Riyadh province, with a precision of $\pm 5\%$ and at 5% level of significance, we need 384 patients each at urban and rural PHCCs.

The calculations are given below:

$$\text{Sample size- } n = (1.96)^2 \times (0.50(1-0.50)) / (0.05)^2 = 384.16 \text{ i.e., } 384$$

Anticipating 15% of non-response and incomplete responses from the patients, the required sample size will be increased by 56, so that we need 440 each from urban and rural PHCCs.

$$(2) n = (Z_{\alpha} + Z_{\beta})^2 ((p_1 q_1) + (p_2 q_2)) / (p_1 - p_2)^2 \text{ in each group}$$

Where $q_1 = (1-p_1)$, $q_2 = (1-p_2)$, and p_1 and p_2 (are proportion of patients having access and utilisation of PHC in urban and rural regions), $Z_{\alpha} = 1.96$ for 95% confidence level, $Z_{\beta} = 0.84$ for 80% power and 1.28 for 90% power.

For the comparison between urban and rural patients in relation to accessibility and utilisation of their PHCCs, it was assumed a difference of 10% between urban and rural patients (60% among urban patients, 50% among rural patients), with 80% power and at 5% level of significance, we need 384 patients each at urban and rural PHCCs. The calculations are given below:

Sample size - $n = (1.96 + 0.84)^2 [(0.60)(0.40) + (0.50)(0.50)] / (0.60 - 0.50)^2 = 384$
in each group (in each of urban and rural regions)

With 15% non-response and incomplete responses from the patients, the required sample size of 440 will be recruited from each of the urban and rural PHCCs.

For both the descriptive and bivariate testing, we need a total of 880 patients from the selected urban and rural PHCCs of Riyadh province (88 patients from each PHCC).

Recruiting the patient participants

A random sample of about ninety patients was selected from each of these ten PHCCs. Due to non-availability of a sampling frame (no appointments at PHCCs), random time durations for five days in a week will be used to distribute the study questionnaire among the patients who are willing to participate in the study.

After ethical approval (see section 4.8 below for further detail) the practice managers at each of the PHCCs were sent a letter from the MOH introducing the researcher and authorising study. This was then followed up by a phone call by a male research assistant²⁴ and a date and time was set up for a face to face meeting with the PHCC practice managers to discuss the research, enlist support to access patients and complete the questionnaire survey and recruit service providers (including practice managers) for one to one interviews (objective two). The meetings with the practice managers (and the one to one interviews with service providers) were carried out during the first field work trip which took place between 17th September to 5th November 2013.

²⁴ The male research assistant in this study was my father Ahmad Alfaqeeh. The gender dynamics in KSA make direct male-female communication very difficult and the support of a male research assistant was invaluable in negotiations with male gatekeepers and respondents/participants. This is discussed in detail in (section 4.5.3)

During the access meetings with the practice managers patient and service provider recruitment (including eligibility criteria) was discussed in detail. The practice managers were shown a copy of the questionnaire and topic guide for the one to one interviews with service providers. All practice managers were very supportive of the study and agreed that the nursing staff would support with the recruitment of patients for the questionnaire survey, help administer the questionnaire and ensure that PHCC staff took part in the one to one interviews. In some cases the practice manager introduced the researcher and her research assistant to nursing staff so they were able to discuss patient recruitment and patient support for completing the questionnaire survey directly with the nursing staff.²⁵Based on the sample calculation discussed above approximately eighty eight questionnaires were needed for each PHCC. In the event however, ninety (to account for spoilt or the need for additional questionnaires and information sheets) were left with the practice managers at each PHCC for completion with the agreement that the researcher will telephone for regular progress reports on how the questionnaire survey was proceeding and return to collect the questionnaires.

²⁵ Being a Saudi researcher and speaking Arabic helped greatly with the meetings with the practice manager gatekeepers and the nursing staff particularly where they were Saudi.

The questionnaire

The questionnaire used was adapted from the National Health Service (NHS) National Survey Programme, PCT Question Bank 2008 v2 27th November 2007). The questionnaire was developed by the Quality Care Commission and permission to use and adapt the questionnaire was obtained from them prior to using the questionnaire (see appendix 10). A number of questionnaires were reviewed but the Quality Care Commission questionnaire was most relevant to meeting the study objectives as it also allowed for an exploration of Andersen's predisposing, enabling and need factors and thus was a 'close fit' to the conceptual framework of the study. The original questionnaire was a validated measuring instrument and included 123 questions in 15 sections covering information on local PHCS in the UK. The final questionnaire used for this study included 50 questions over 11 sections (see appendix 11).

Modifications to the questionnaire

Reducing the length of the questionnaire

The questions (and sections) were reduced for a number of reasons:

A number of questions on the original questionnaire were not relevant to the KSA context for example the selected PHCCs had a B3 classification which included the following services: dentistry, laboratory, accommodation for the service providers (nurses or GPs) and therefore the questions that were not relevant to those services were excluded. Juniper (2009) has pointed out the pitfalls of omitting questions from validated questionnaires arguing that 'validates questionnaires are precision instruments' (pg.1015) and consequently omitting

questions reduces the validity of a questionnaire because it alters the ordering and weighting of questions. He also argues that questions should never be added and shortened versions of questionnaires should be validated. This is however important if questionnaires are being used for comparative purposes. The results of this study are not intended to be compared to data collected by the Quality Care Commission in the UK and therefore the questionnaire was used and adapted (with caution to Juniper's comments) as the priority for this study was to use a validated and relevant questionnaire of standard.

The original questionnaire was considered too long to be completed by the participants because there is not a tradition of patients completing questionnaire surveys in the KSA and therefore a lengthy questionnaire was felt that it may deter potential respondents from completing the questionnaire.

The questionnaire interviewer was administered (by nurses) and therefore a lengthy questionnaire would have imposed upon the time of already busy nursing staff. The questionnaire was adapted for the KSA context. Culturally irrelevant questions were omitted and the questionnaire was translated from English to Arabic by two independent and native Arabic speakers. The questionnaire was reviewed several times by the researcher and the research assistant who are also native Arabic speakers.

Details of the specific modifications made to the questionnaire

For all the questions in the adapted questionnaire, the original ‘GP practice/health centre was substituted with doctor and or PHCC as appropriate to the question since these were more relevant to the KSA context. A number of questions from the original questionnaire were modified (G2, J10, J11 and P2) and 5 new questions were added (B1, D2, D5, D6 and P4) the modifications to the original questionnaire and the questions added are discussed in further detail below.

The specific modifications to the questionnaire are as follows:

G2: the original question asked respondents ‘the last time you saw someone other than a doctor from a GP practice/health centre, who did you see?’ was changed to ‘the last time you saw someone other than a doctor from your PHCC, who did you see?’ This question gave respondents the option to tick the following boxes: a practice nurse or nurse practitioner, a midwife, a district nurse, a health visitor, someone else and finally I were not sure who I saw. Since there are no district nurses and health visitors (or equivalent roles) in the KSA these categories were substituted with the categories of dentist and health educator which the PHCCs classified as B3 by the MOH health should be providing (G2 in the adapted questionnaire).

J10: the original question asked ‘do you need any help understanding English’? was changed to ‘do you need any help understanding Arabic’? The national language of the KSA is Arabic and it was important to understand if all patients were fluent in the language. There is also some evidence in the literature that

suggests that Saudi patients may not understand the Arabic dialect spoken by non-Saudi professionals and may therefore require interpreters (J8 in the adapted questionnaire) (Karout *et al.*, 2013).

J11: the original question asked ‘the last time you saw someone from your local health centre/GP practice, was there someone who could interpret for you?’ was changed to ‘the last time you saw someone from your PHCC who did not speak your language, was there someone who could interpret for you?’. This question was added to understand if there were any communication barriers between predominantly Saudi patients and non-Saudi Arabic speaking doctors (J9 in the adapted questionnaire).

L1: the original question asked ‘in the last twelve months have you had your blood pressure taken by anyone from your GP practice/health centre?’ was changed to ‘in the last twelve months have you had your blood sugar levels measured by anyone from your PHCC?’ The question was modified from blood pressure to blood sugar levels because diabetes mellitus is currently prevalent and very high in the KSA (Alqurashi *et al.*, 2011) L1 in the adapted questionnaire.

P2: the original question asked ‘what was your year of birth?’ In the modified questionnaire an additional sentence was included ‘please write approximate year if not sure’ to allow patients the option to estimating their date of birth. This was added because many particularly older Saudis do not have any written record of their date of birth, as records were not kept when they were born and therefore

only have knowledge of approximate dates of births (P2 in the adapted questionnaire).

Questions added to the modified questionnaire

B1: 'is the distance from your residence an issue in visiting your PHCC'? This question was added because the evidence base shows that distance from HCF are a barrier to accessing services (see chapter 3, section 3.5.2) and to understand if the location of the PHCC in rural or urban areas impacting on access to PHCC (see chapter 2, section 2.3.5) for the definition of urban and rural used in this study).

D2: 'did you have to pay for any prescribed medicine (s) for last 12 month. This question was added because it was important to understand if patients were able to acquire their prescribed medications from the PHCC pharmacies which offer free medications or if patients had to go to private pharmacies to obtain the necessary medications. This question would also allow us to see if the pharmacies were fully equipped to provide patients with the necessary medications. One of Andersen's variables under enabling factor is the visit cost and this would help to understand this.

D5: 'in the last 12 months have you asked a traditional healer for any advice in medicines'. This question was added to understand if patients were used alternative services other than the PHCC. Traditional healers are a recognised

alternative to allopathic medicine and heavily used in the KSA (other countries) and can often be a barrier to accessing health care including PHCCs.

D6: ‘was the traditional healer’s advice helpful’. This question was linked to question D5 as it was important to understand if the traditional healer was considered to be useful service.

P4: ‘what is your current monthly income’? This question was asked because it one of Andersen’s enabling factors is income and we wanted to see the impact of the income varied between rural and urban patients.

As far as possible, minimal changes were made to the original questionnaire. The adapted questionnaire was submitted to the Quality Care Commission for review and was subsequently approved.

As discussed in Chapter three (section 3.3.3) Andersen’s model of health services use has evolved over time in response to issues related to health policy and service delivery. The final iteration of the model (phase 5) highlights that the ‘understanding of health services use is best accomplished by focussing on contextual and individual determinants’ (Andersen 2008, pp.652). Consequently this was the focus of this study and the measuring instruments (questionnaire and topic guides) were designed to reflect this.

Figure 4.5 below shows the variables related to Andersen's predisposing, enabling and need factors related to individual determinants (patients) and how they were applied to the questions in the questionnaire.

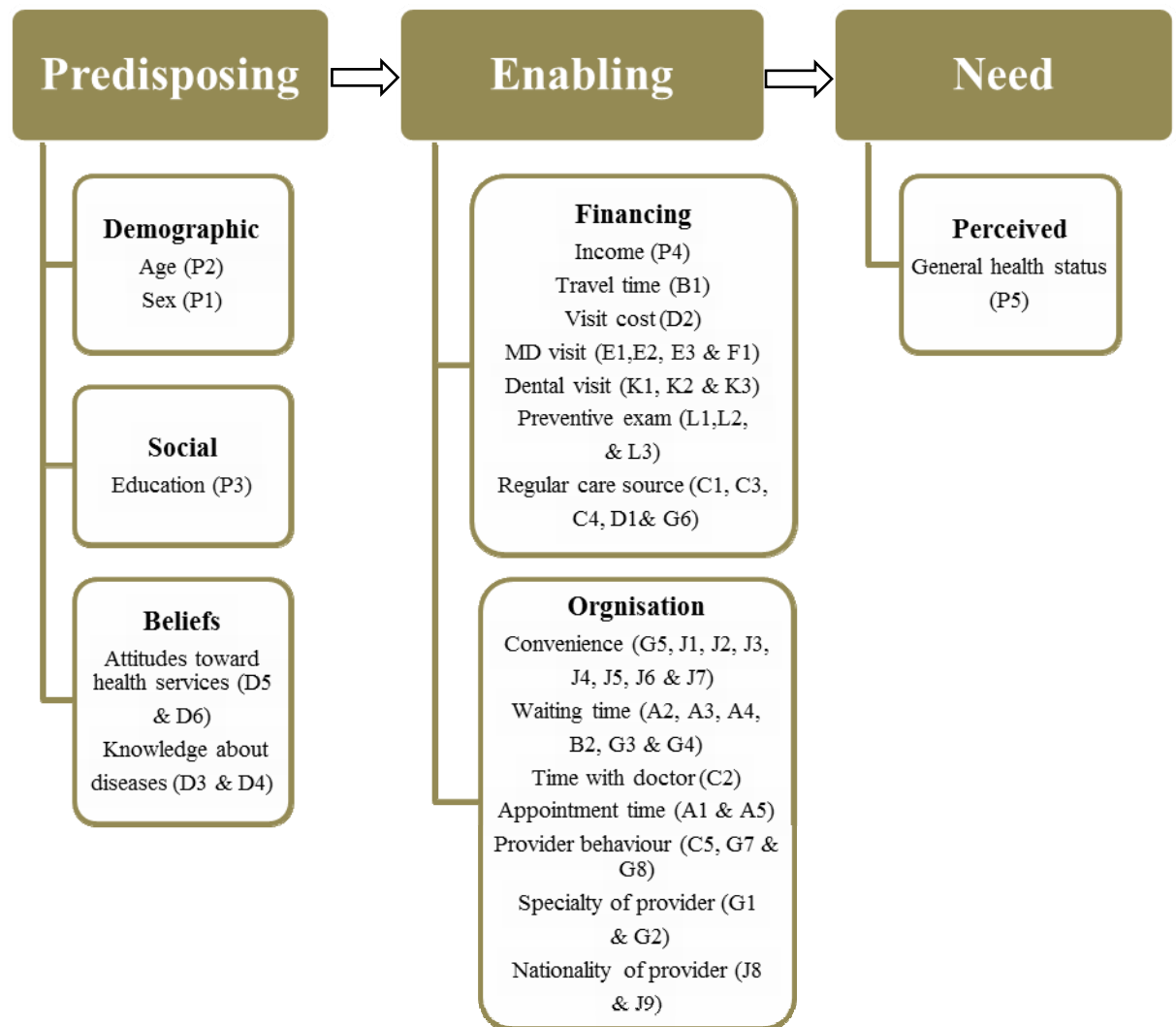


Figure 4.5 Patient questionnaire applied to Andersen individual determinants (predisposing, enabling and need factors).

Why an interviewer administered questionnaire?

Data from the patient participants was collected using an interviewer administered (PHCC nurses administered the questionnaires). Overall (despite the problems of access, recruitment and assisting the patient participants to complete the questionnaire discussed in the section below), this proved to be a resource effective method for collecting the views of a large number of patient participants (also see the section on data collection below). The completion of the questionnaire by as many participants as possible also adds to the degree of consistency and reliability of the responses.

Piloting the questionnaire and information sheet/consent form ²⁶

The Arabic version of the information sheet/consent form and questionnaire were piloted with Saudi postgraduate students studying at the University of Bedfordshire. Pilot participants were requested to offer their comments and feedback on the following aspects of the questionnaire and information sheet:

Questionnaire: are the words/questions being understood, are the questions being interpreted in the same way, are the range of responses available being used and are respondents following the instructions/directions onto questions and sections.

²⁶A standard MOH information sheet/consent form was used for this study. The format was mandatory for obtaining MOH ethical approval. The information sheet/consent form is provided in appendix 13.

In addition the pilot participants were asked to comment on the overall format of the questionnaire and the length of the questionnaire and the time taken to complete.

Information sheet: language used in the information sheet, overall understand ability, particularly the voluntary nature of participation and the length of the information sheet. The researcher watched the participants read the information sheet and complete the questionnaire and made notes on any problems they referred to while reading the information sheet and completing the questionnaire. The researcher also administered some of the questionnaires with the pilot participants (since the researcher and nurses were intended to administer the questionnaires during data collection) to identify any problems that the researcher and nurses may have when supporting patient participants with completing the questionnaire. Notes were made on modifications required to the information sheet and the questionnaire.

Piloting the questionnaire and the information sheet gave the researcher the opportunity to ensure that the translation from English to Arabic was easily understood, the specificities of the questions themselves and issues related to completing the questionnaire. Based on comments from the pilot participants modifications were made to the information sheet and the questionnaire. The information sheet/consent form followed the format prescribed by the MOH and pilot respondents made minimal changes to this document and only the size of the title font was increased for better presentation of the information. The

questionnaire included simplifying the language of the questions. In some cases the Arabic translation used a very high level Arabic grammar and pilot participants suggested that more ‘every day’ Arabic would be more appropriate to ensure that respondents fully understand the questionnaire.

The information sheet/consent form was stapled to the front of the questionnaire so that it was read before proceeding to complete the questionnaire. The final form of the questionnaire was delivered to practice managers at each of the participating PHCC. Guidelines for completing the questionnaire including patient inclusion and exclusion criteria and recording non-responses were provided to the practice managers to deliver to the nurse recruiters who also administered the questionnaires with the patient participants²⁷.

²⁷Information from the quantitative piloting exercise was not used in the study.

Data collection

There were two phases of data collection and 935 questionnaires were collected in total. Phase one (1 January- 31 March 2014) of the data collection generated 438 questionnaires and phase two (18 May -10 July 2014) of the data collection returned 538 questionnaires. Table 4.3 below shows the number of questionnaires handed out at each of the phases of the data collection, returned, excluded and the response rate for each PHCC.

As mentioned above, the sample calculation was carried out to ensure that there was enough data to ensure descriptive and bivariate testing. This is particularly important where the resources of time and money are limited as in the case of this study (Kim and Seo, 2013). To ensure optimal results a total of 880 patients were needed to complete the questionnaire from the urban and rural PHCCs of Riyadh province (88 patients from each PHCC). The final sample size was 880 and exceeded this for a number of reasons. Collecting more questionnaires was opportunistic (and is explained in detail below) and also driven by the need to collect as much data as possible since there is little previous research on access and utilisation of PHCS in the KSA and produce substantial generalisable data where the statistical power is strong and will help answer the research question.

Table 4.3 Number of questionnaire collected in the two phases of data collection

PHCC Name	Classification (Urban/Rural)	Number of questionnaires collected by the nurses (phase one)	Number of questionnaires Excluded	Estimated non-response to completing the questionnaire	Number of questionnaires collected by the researcher (phase two)	Total number of questionnaires used
(A)	Urban	70	0	4	36	106
(B)	Urban	45	7	3	70	108
(D)	Urban	7	5	0	79	81
(E)	Urban	22	6	3	78	94
(J)	Urban	40	2	2	64	102
(C)	Rural	75	3	2	25	97
(F)	Rural	40	10	1	55	85
(G)	Rural	77	3	0	25	99
(H)	Rural	0	0	0	84	84
(I)	Rural	62	5	0	22	79
Total	-----	438	41	15	538	935

The challenges of data collection

The target was that the questionnaire survey should be completed within a three month period (See Appendix14) phase one (January - 31 March 2014). None of the PHCCs however achieved this target. There were two main reasons for this:

Difficulties recruiting patient participants: problems completing the questionnaire focussed the patient's reluctance to participate in completing the questionnaire.

One practice manager explained that patients 'were not co-operating' (PHCC D).

Research is not carried out as routine in the KSA context and patients are unfamiliar with completing questionnaire surveys. In addition levels of literacy (reading, writing and understanding) vary by social class so patient participants may not have fully understood the requirements or value of their contribution to the study. Also the questionnaire survey was taking place in the PHCC administered by the PHCC nursing staff where prospective participants were registered and thus they may have been reluctant to consign their views to paper for fear that it would impact on the care they were receiving at the PHCC.

Lack of staff (nurses) to administer the questionnaire. One practice manager explained that nursing staff could not allocate enough time to recruiting patient participants and supports them with completing the questionnaire due to the demands of their nursing roles (PHCC B). These statements were common by practice managers at all the PHCCs, that they were unable to recruit patient participants to complete the questionnaire survey. Supporting patient participants to complete the questionnaire was also time consuming and nurses were already

carrying heavy workloads and were thus unable to give recruitment and questionnaire completion the necessary attention.²⁸

The contingency plan

Difficulties in recruiting participants are well reported in the literature (Bower *et al.*, 2009; Patel *et al.*, 2003; Shavers *et al.*, 2002; Boles *et al.*, 2000; Flaskerud and Winslow, 1998; Holden *et al.*, 1993) and the presence of the researcher at the data collection site has been recorded as helping improve questionnaire response rates (Webster, 1997). A number of strategies were put into place to help boost the response rate. The researcher made weekly update calls to the practice managers at the PHCCs to ensure that the momentum for the questionnaire survey continued.²⁹ Often it was not possible to get through by telephone to all the practice managers for a regular update due to telecommunications problems and in one case a practice manager explained that ‘he did not know how many questionnaires had been completed’ (PHC D) and continued to explain his time limitations were impacting on supporting the research. The male research assistant also made some phone calls to the practice managers to request that they encourage their nursing staff to assist patient participants to complete the

²⁸ I discovered how time consuming facilitating the questionnaire was during the second field work trip (May-July 2014) when I facilitated patient participant’s completion of the questionnaires. Recruiting and supporting patient participants with the completion of one questionnaire took approximately twenty to thirty minutes.

²⁹ At this time the researcher and the research assistant were back in the UK.

questionnaires. The female researcher felt that the practice managers may be reluctant in communicating with a female and therefore the male research assistant carried out some of the communication to ensure more compliance. The follow-up calls by the male researcher to the practice managers approach did result in some of the PHCC meeting the highest number of questionnaire survey, for example PHCCs I, G, C and A completed 77 questionnaires each. The remaining PHC however, were well below the patient recruitment and completion of questionnaires. As a result the researcher (and the male research assistant) travelled back to Riyadh (May-July 2014) (phase two of the data collection) to visit each PHCC with the view to recruiting and facilitating patient participants to complete the questionnaires and to maximise the number of completed questionnaires.

The researcher with the research assistant travelled to each of the PHCC after arranging a mutually convenient time and met with the practice managers again. They collected the completed questionnaires and discussed some reasons why the recruitment and response rate had been poor. Practice managers recounted problems of recruiting patient participants and nurse availability for recruiting and supporting participants complete the questionnaires mentioned above poor (some of these statements have been reported above). The researcher and the male research assistant then got permission to continue recruiting and supporting patient participants to complete the questionnaires. Table 4.3 above shows the number of patient questionnaires completed by the PHC nurses, the number of patient questionnaires excluded, estimated non-response to completing the

questionnaire, the number of questionnaires completed by the researcher and the research assistant and the total number of questionnaire completed at each PHCC.

Incomplete questionnaires were removed from the final data set as ‘all classic and modern statistical techniques assume (or require) complete data...’ (Osborne, 2013, pg. 105) but as Gyimah (2001) argues there is ‘no consensus among methodologists on the single most effective technique of handling missing information’ (pg, 4). Discarding or substitution of data may lead to some bias in the results. All patient questionnaires were examined for ‘missingness’ an incomplete questionnaires were discarded. Table 4.3 shows the number of questionnaire discarded for each PHCC. An incomplete questionnaire refers to where more than half of the questions in the questionnaire were not completed/data was missing. After discussion with the nurses at some of the PHCCs it transpired that these questionnaires tended to be those that had been handed to patient participants to complete themselves or where the nurses had started to support patients with completing the questionnaire but had then been called away leaving the patient participant to complete the remainder of the questionnaire themselves.

Experiences of a female researcher in a segregated society

The impact of gender of the researcher (female) on the research process has been discussed by a number of researchers who discuss the way gender dynamics impact on the process of accessing the PHCC practice managers and the completion of the questionnaires with patients (Rezai-Rashti, 2013). The KSA adheres to the strict Islamic law of limiting interaction between men and women which presented some challenges for data collection. There are clearly delineated boundaries related to how men and women can interact with, and in which physical spaces in the KSA. Women are not permitted to interact with non-*mahrms* (all those men Muslim women are allowed to marry under Islamic law, for example cousins, non-related men as opposed to *mahrms* who are fathers, brothers and sons). Based on availability and interest in the study the researchers father acted as the male research assistant during this study. Limiting interaction between men and women is reflected in the Saudi law that women are not permitted to drive and clearly defined public areas for men and women and in the context of the PHCCs there were designated waiting areas for men and women.

The researcher was therefore not permitted to drive alone to the PHCCs for the data collection and had to be accompanied by a driver and her *mahram* (in this case it was the researcher's father who as mentioned was her male research assistant). As discussed in Chapter two the PHCCs were situated over a large geographical space so driving from one to the other took a whole day and often there were no hotels/motels close to the PHCCs which added to the overall distance and inconvenience of getting to the data collection sites. On arrival at the

hotels/motels there was considerable questioning about the nature of the relationship of the research assistant and the researcher and had to provide evidence that we were father and daughter and only then, were the researcher and male research assistant allocated a room. The evidence provided included the Saudi national identity card which known in Arabic (Bitaqat Al-Hawia Al-Wataniya).

During data collection the researcher was unable to interact with non-*mahram* men in the male waiting areas of the PHCCs and so it was essential to have a male research assistant to help with accessing and recruiting male patient participants to complete the questionnaire. Once the male research assistant had accessed and recruited the male patients, the female researcher would come to the male waiting area to assist with the completion of the questionnaire. The researcher had to be fully veiled and the male research assistant was present throughout the interaction between the researcher and male patient participants which impacted on the rapport between the researcher and patient participants.

It was clear that having being a Saudi Arabian citizen and thus having a shared background helped with the researcher and the research assistant interactions with the PHC service providers as well as with accessing, recruiting and assisting the patient participants with completing the questionnaires. The researcher (and research assistant) are fluent Arabic speakers and thus communication with research participants was not a problem. Some patient participants were however unable to read their vernacular (regardless of living in urban or rural areas) so the

researcher and research assistant had to read out the information sheet/consent form and questionnaire for these individuals. Patient participants were not willing to sign the consent form as they felt their views would not remain confidential. If patient participants verbally agreed to take part in the study and completed the questionnaire this was therefore taken as consent (Oppenheim, 1992). Existing research has reported that where consent is required for respondents to complete a questionnaire the response rate can be low (Angus *et al.*, 2003).

Quantitative data analysis

Once the completed questionnaires were collected from the PHCCs and reviewed to ensure they were completed properly, for example had the response directions been followed and were all questions completed³⁰ the questions were coded and data was entered into custom designed data base using SPSS 21 software. Descriptive statistics of all the variables were run and then the bivariate statistical test was applied to understand the association between the independent variables

³⁰Incomplete questionnaires were discarded. This point is discussed above. Non-response sheets were developed and handed out to the nurse recruiters. When the researcher collected the questionnaires from the PHCC the nurses explained that they had not had time to complete the non-response sheet and explained that participants refused to complete the patient questionnaires because patients were in a rush and did not have time to complete the questionnaire and the nurses did not have time to administer the questionnaires due to their workload. During the second fieldwork trip when the researcher and the research assistant were recruiting and administering the questionnaires with patients no patient participants declined to complete the questionnaire and they reported that this was due to their commitments and patients.

(age groups, gender, region, and income levels³¹) and the dependant variables (outcomes=different components of access as utilisation of PHCCs which were; Making an appointment, visiting the PHCC, seeing a doctor, medicines, tests and referrals, seeing another professional from this PHCC, overall about your health centre, dental care and health promotion).³²

4.6 Validity

Validity is a concept that is concerned with the extent to which the research findings are a measure of what they were intended to measure, including how far the research question(s) has been answered and the aim and objectives met. Validity is associated with the integrity of the results/findings and has two aspects, internal and external.

The internal validity relates to the fitness for use of the research instruments, which in this case should be relatively high, as both the patient questionnaire was adapted from an existing validated instrument and the topic guides which were developed from an extensive search of the literature and the conceptual

³¹The bivariate analysis, for the components ‘making an appointment’ and ‘Seeing another professional from this primary health centre’ was not possible due to the non-availability of data (the study subjects did not respond as these questions are not appropriate in this setting).

framework (Andersen's model) which has been tested by many other researchers working in the field of HSR.

The level of content validity is an aspect of internal validity directly related the extent to which the questions that were used were representative of the diverse aspects of the phenomenon under investigation. This study accomplished a high content validity, through the use of questionnaires and semi-structured interviews, in which the questions were shaped to embrace all the complex aspects of the PHCS planning and delivery in the KSA. Further enhancement of content validity was possible through the use of nurse recruiters and facilitators who administered the patient questionnaires. In addition all questions in the patient survey and the topic guides were phrased so that the language employed and the structure of the questionnaire/topic guide enables ease of understanding/discussion. Instructions were written on the patient questionnaires so that the nurses administering the questionnaires could easily access them before commencing the questionnaire and during the patients completing the questionnaire. The topic guide included a section on introducing the study and the researcher ensured the same procedure for giving this information was followed before each interview commenced. The validity of the qualitative interviews was also carried out by checking if the accounts provided by the interview participants and the researcher were accurate and credible by checking if the audio recordings of interviews with service providers and Key MOH policy makers were accurate against the translated transcripts (Creswell and Clark, 2010) and regular retesting of qualitative data against the conceptual framework. The topic guides and the questionnaires were

piloted (see section 4.5.2 for piloting of the topic guides, section 4.5.3 for piloting of the questionnaire).

External validity for the questionnaire is based on the extent to which the results from the patient questionnaire can be generalised to the larger population (Creswell and Clark, 2010). The sample for the patient questionnaire survey mirrors the general population and therefore it is felt that the results from this study are generalisable to the general population. External validity in qualitative research refers to confirming findings by external means, was ensured in this study by the degree of triangulation (Denzin, 2012), how well findings generated by different participant groups converge; it is expected to be relatively high (Ritchie and Lewis, 2010).

As well as internal and external validity of the measuring instruments, the cultural validity of the topic guides and the questionnaire were ensured during the pilot stage of the research process. The topic guides were developed and the questionnaire adapted by the researcher who is a Saudi and therefore familiar with the KSA cultural context. The measuring instruments were also piloted with Saudi PhD students at the UOB to further ensure that the questions on the topic guide and the questionnaire were culturally relevant and sensitive to the KSA context. Section 4.5.2 and section 4.5.3 outline the piloting process for the topic guides and the questionnaire respectively (Hanna *et al.*, 2008; Alavi *et al.*, 2007).

4.7 Reliability

Reliability refers to the degree of repeatability of the study i.e. if it was repeated by another researcher using the same methodology. In terms of the quantitative patient survey the reliability was checked using the Cronbach's alpha (1951) which is a statistical test used to 'determine the internal consistency or average correlation of items in a survey instrument to gauge its reliability' (Santos, 1991 pg. 1). Cronbach's alpha scale therefore provides the indication of the average correlation of all the items that comprise the findings from the patient questionnaire and was used, therefore, as the measure of the internal reliability of the questionnaire. All values in the sample greater than 0.7 were considered reliable in this study.

In terms of both interview and survey questionnaire, reliability was enhanced by the psychological environment in which the data was collected; the presence of third parties to assist the participants of the questionnaire and the familiarity of the locations used for the semi-structured interview locations are likely to provide a sense of privacy, security, confidentiality and informality (Ritchie and Lewis, 2010).

4.8 Ethics

This section presents the process of ethical approval procedures, ethical considerations and ethics in practice, particularly how the researcher's position as an insider and/or outsider influences the research process (Holland *et al.*, 2014; Block *et al.*, 2013; Franklin *et al.*, 2012; Kaiser, 2009).

4.8.1 Ethical approval procedures

Ethics approval for this study was obtained from the University of Bedfordshire (UOB) Ethics Committee and the MOH (see appendix 15 and 16). Figure 4.6 below shows the MOH ethical approval procedures followed for this study.

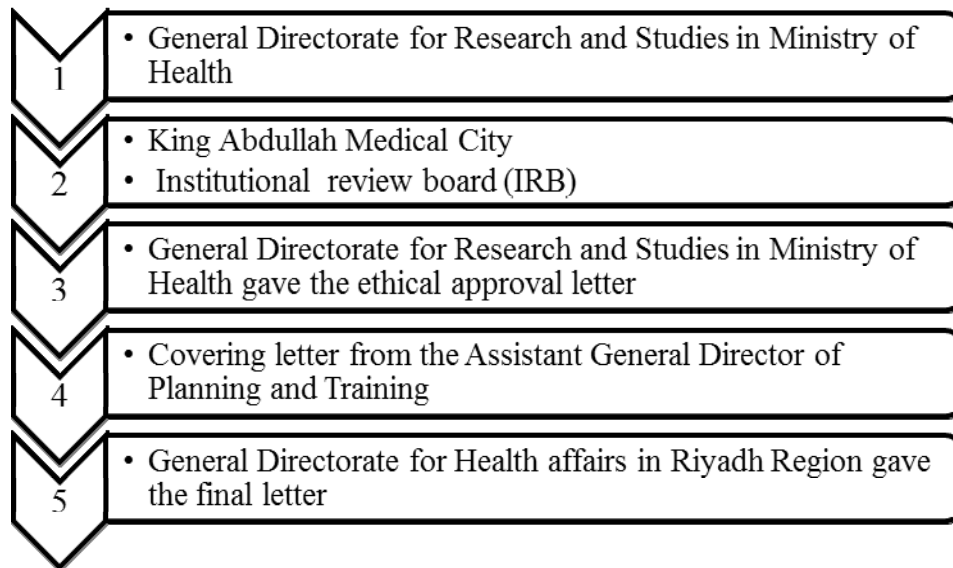


Figure 4.6 MOH ethical approvals process for this study.

Ethical approval for this study was part of the RS1 (research stage 1) application process at the UOB. Application for ethical approval for the study was then submitted to the MOH in the KSA to ensure that the study met the required ethical standards of the MOH.

The ethical approval procedure for gaining MOH ethical approval was as follows; an initial application/request was logged with the General Directorate for Research and Studies at the MOH who then re-directed the application to the King

Abdullah Medical City Hospital where they have an Institutional Review Board (IRB) which also deals with ethical applications for research studies.³³

The ethics application was re-directed to the IRB at King Abdullah Medical City Hospital because the ethics forms were submitted in the time leading up to pilgrimage and the MOH was preparing for Hajj (pilgrimage) so were unable to review the ethics documents. The ethics forms were then submitted to the IRB at King Abdullah Medical City Hospital and after review they confirmed their approval of the study to the General Directorate for Research and Studies at the MOH who issued an ethical approval letter. The research assistant then took the ethical approval letter to the Assistant General Director of Planning and Training at the MOH who issued another covering letter for the General Directorate for Health Affairs in Riyadh Region who then issued an access letter approving and supporting the study and requesting MOH Key Policy makers, PHCC practice managers to take part in the study and provide access to the service providers and patient participants. The General Directorate for Health Affairs in Riyadh Region sent the access letter directly to the practice managers at the selected PHCCs.

³³There are two ethics committee in KSA, one in Makkah and the other in the Eastern province. Documents for ethical approval will first go to the MOH and depending on the next sitting of the ethics committee applications may be directed to other ethics committees.

The ethical approval process at the MOH was long and laborious; the process took approximately two months. The timing of the submission of the application coincided with the preparations for Hajj (pilgrimage) which slowed down the process significantly. The research assistant negotiated and followed up the application of forms and collection of letters in person even going to the IRB at King Abdullah Medical City Hospital in Makkah in person. The ethical approval process, (like much of the rest of this study) is heavily dependent on having a male research assistant (*mahram*) without whose assistance and persistence the ethical approval process would have taken considerably longer.

4.8.2 Ethical principles

Avoiding harm

Part of the ethical process is to ensure the safety of participants and the researcher from physical or emotional harm. The research participants (MOH key policy makers, service providers and patient participants) were asked to discuss/complete questionnaires on the barriers and facilitators to accessing PHCCs therefore did not include sensitive questions that could potentially cause emotional harm. Questionnaires for the patient participants were nurse/researcher administered and the interviews were carried out by the researcher which also militated against any potential emotional harm as the confidentiality of patient responses could be reaffirmed at the beginning and at the end of the completion of the questionnaire. The interviews and the patient questionnaire survey were carried out at the MOH building and the PHCCs which were familiar spaces for the participants and reduced the potential for physical harm.

There were some patient participants who found it difficult to assign their views to paper but this was because there is a limited research culture in the KSA and patients are not familiar with being asked to share opinion or complete questionnaires. The nurses that administered the questionnaires to the patient participants were 'familiar' faces to the patients and this helped with patients agreeing to participate in the patient questionnaire survey. In addition the researcher is a Saudi national and being able to speak Arabic also enhanced the interaction between participants.

The nature of Saudi society means that a woman cannot travel without a *mahram* or a male driver and a female companion. In this case the researcher was always accompanied by a male research assistant, her father who was also her *mahram* ensuring her physical safety. In addition the researcher and her supervisor were in frequent and regular contact via text message and skype throughout the fieldwork stage of this study.

Consent

An information sheet providing the aim and objectives of the study was provided to each research participant (there were different information sheets for the MOH policy makers, the service providers and the patient participants) explaining the role of the participants, importance of the research, and the fact that the information participants provided would be confidential to the research team. The information sheet also included a section on consent (as the template was provided by the MOH). None of the participants that took part in this research were willing

to give written consent. This became evident very early on in the fieldwork and so verbal consent was taken. In the case of the interviews with the MOH policy makers and the PHCC service provider's verbal consent for the interviews was recorded. This was however not possible for the patients participating in the questionnaire but only patients who consented completed the questionnaire. In retrospect the patient participants could have been asked to add their initials to a consent box on the front sheet of the questionnaire but the fact that patients are unfamiliar with the research process means that this may not have been acceptable as they may have felt that they could still be identified from their initials. Asking patients to tick a box confirming consent is also problematic because of the cultural difficulties of consigning themselves to paper discussed above and that ticking a box is an unreliable consent procedure (Oppenheim, 1992). To ensure that nurses and the researcher did not fail to go through the consent process with the patient participants the nurses and the researcher added a C to the front sheet of the questionnaire to report that consent had been taken.

Confidentiality

Interviews from the MOH policy makers and the PHCC service providers were audio-recorded and codified but because the sample was very small (only three MOH policy makers) ensuring that the details of this sample remained anonymous within the research team was difficult because the identity of the service providers was necessary for recruitment.

The identity of the service providers however was only made available to the research team (researcher, research assistant and the supervision team). The patient questionnaires were coded and no personal/identifiable information was requested from the patient participants.

All coded data from the study was stored on a password protected file on a laptop and hard copies of the data stored in a locked cabinet at the UOB.

4.8.3 Ethics in practice

Ethics in practice, it's the day to day issues which appear while conducting the study, these issues wasn't expected and was not mentioned in the ethical procedure; there is an ethically important moments (Guillemin and Gillam, 2004) where the researcher should make a decision and respond to the participant with reflexivity.

Researcher's insider/outsider status and the space between

The qualitative researchers' perspective is perhaps a paradoxical one: it is to be actually tuned-in to the experiences and meaning system of others-to indwell-and at the same time to be aware of how one's own biases and preconceptions may be influencing what one is trying to understand (Maykut and Morehouse, 1994, P, 123 in Dwyer and Buckle, 2009).

A researchers identity such as social status, race, gender, culture, origin, language, political identity and other sharing features or attributes (Cui, 2014) have been discussed as influencing if the researcher is seen as an 'insider' or and 'outsider'

and therefore the relationship between the researcher and the researched. The researcher is female Saudi national and an employee of the MOH and was therefore an 'insider' (for the most part) in the context of this study. One of the main criticisms of 'insider' research is that this may mean that the researcher may find difficult to maintain some detachment therefore objectivity or simplification within the research than perhaps and 'outsider' researcher (Dwyer and Buckle, 2009). In this research study, the researcher and research assistants 'insider' status particularly being a Saudi national, speaking Arabic, being a Muslim and employee of the MOH was essential to the successful completion of the study for a number of reasons:

The researcher would not have received a MOH scholarship if she had not been employed by the MOH. These scholarships are only open to Saudi MOH employees on annual basis and they have to be applied for with a relevant research topic and proposal which may be beneficial to the MOH for service planning and delivery. The researcher and research assistant Saudi nationality, Arabic language fluency helped with the ethical approval process and access to the MOH policy makers, the service providers and the patient participants. It was evident during the access and fieldwork stage of the study that the practice managers (all Saudi Muslims) and nurses (majority Muslims) and GPs (all Muslims) were more receptive to a Saudi/Arabic/Muslim researcher. In one of the PHCCs the nurses invited the researcher for tea and deserts and explicitly said that they wanted to help the researcher because she was a Saudi and '...that we are proud of you'... The nurses offered their telephone numbers to the researcher for ease of access

and updating her on the progress of administering the questionnaire. This was one of the PHCC that completed higher number of questionnaires. Thus being a Saudi, Arabic speaker and a Muslim ‘opened doors’. Being an employee of the MOH the research being sanctioned by the MOH did mean easier access to the PHCC practice managers, service providers and the patient participants but in this case the researcher may also be seen as an ‘outsider’. Since the PHCCs and the service providers are employed by the MOH the researchers ‘insider’ status as an employee of the MOH made her an ‘outsider’ for the PHCC service providers and the patient respondents. Despite this the PHCC service providers did provide detailed information and did not hold back from presenting their views on the barriers and facilitators to patients accessing PHCCs.

At times the researcher was an ‘outsider’ this was particularly the case where interactions took place with men. Gender ‘outsider’ status was apparent throughout the study and the reliance on the research assistant (*mahram*) was an example of this. There were times when the research assistant reaffirmed my ‘insider’ status (to balance my ‘outsider’ status as a woman) by reinforcing the fact that the researcher was an employee of the MOH. This meant that it was difficult for the MOH policy makers or PHCC service providers to refuse consent to take part in the interviews but it may have influenced their openness of their responses. This point is reinforced by the fact that none of the MOH policy makers or the service providers were willing to sign the consent forms provided despite reassurances about the confidentiality of the interviews. In the interests of being a reflexive researcher at this stage verbal consent was taken. On another

occasion one of the MOH key policy makers explained that he was too busy to take part in an interview lasting approximately one hour. The research assistant reinforced the researchers 'insider' status and the interview commenced. This was an ethically important moment 'should the interview be rescheduled or continue'. As mentioned the timing of the fieldwork close to the Hajj (Pilgrimage to Makkah) meant that the MOH policy maker would unlikely to be available again until after the Hajj (one month). Therefore the interview was carried out and in the event it lasted forty five minutes.

In this study then the researcher was at times an 'insider' and at times an 'outsider'. Dwyer and Buckle (2009) argue that presenting the concepts of 'insider' and 'outsider' in a dualistic way is rather simplistic and restrictive and a dialectical approach may be more reflective of the complexities of the relationship between the researcher and the researched. Becoming a critically reflective researcher therefore is essential rather than understanding 'insider' and 'outsider' status as a binary (Block *et al.*, 2013; Franklin *et al.*, 2012; Warin, 2011; Guillemin and Gillam, 2004). Having the research supervisor present during the first fieldwork trip (17 September - 5 November 2013) meant that her regular questioning of Saudi cultural/religious and PHCC structure/organisation meant that the researcher soon realised the importance of critically reflecting (Hewitt, 2007) on the impact of her 'insider' and 'outsider' status and on the relationship between the researcher and the researched and how this was impacting on the construction of knowledge throughout the research process and interpretation of findings/results. It is hoped that learning to become a reflective researcher

improved the quality and validity of the research as well as ensuring participant, respecting the autonomy, dignity, and privacy of research participants during interactions between the researcher and the researched (Guillemin and Gillam, 2004).

4.9 Summary

This chapter has discussed the methodology chosen for this study and described the specific methods used to meet each objective. A mixed methods research design with a pragmatic approach was seen as the most appropriate to answer the research questions and meet the aims and objectives of the study. The design of the research instruments for the questionnaire survey, the semi-structured interviews and the pre-testing of both instruments was presented. The design, content and appearance of these instruments was a major consideration in the reliability and consistency levels accomplished in this thesis and therefore the use of third parties to assist patient participants was included in the methodology and their role was described. Consideration of the analysis appropriate to the quantitative data and the qualitative findings was also outlined and discussed.

This study embraced a number of ethical issues, not only the standard issues of gaining institutional permissions and assuring participant confidentiality of the responses, but others that were derived from the specific religious, cultural and language context of the participant groups. The degree of detail provided in the chapter illustrates a robust methodological structure, adding validity of the study, which would enable research replication.

Chapter 5: MOH policy makers and service providers perspectives on recent policy and planning developments in PHC and the barriers and facilitators to access and utilisation of PHCS

5.1 Introduction

This chapter turns its attention to presenting the qualitative findings of the research from the one to one interviews with the PHCC service providers (practice managers, GPs and nurses) and the MOH policy makers in the selected rural and urban PHCCs in Riyadh province. The one to one interviews were audio-recorded (with permission) and transcribed and translated where necessary. The language in which the interviews were carried out was based on interviewee preference, some of the PHCC service respondents chose Arabic whilst others preferred to be interviewed in English. All the interviews with MOH policy makers were carried out in English (see Chapter 4, section 4.5.2). The findings from the interviews with the PHCC service providers were analysed separately (using a different thematic framework) from, those carried out with the MOH policy makers and both sets of findings are presented below thematically. The main themes emerging and presented for the service providers are biographical characteristics of the service provider participants, health care provider roles and responsibilities, defining rural and urban PHC, auditing the service, barriers to accessing PHCCs in rural and urban Riyadh, facilitators to accessing PHCCs in rural and urban Riyadh and developing services. For the MOH policy makers the key themes emerging and presented are: present role in the MOH, health care system planning and delivery in KSA, current planning priorities for PHC in the KSA, patients access and utilisation of PHCCs and service improvement. The coding

frameworks are provided in appendix 8 and 9. Word for word quotations are used throughout this chapter. Participants and PHCC are coded using identifiers to maintain the anonymity of participants and PHCC (see tables 5.1 below for an explanation and breakdown of the codes).

The presentation of the findings from the one to one interviews with MOH policy makers and the service providers is driven by the themes and sub-themes that emerged during the analysis of transcripts (please see appendix 8 and appendix 9 for the coding framework) rather than being driven by Andersen's model. Where appropriate; similarities and differences between the views of the PHC service providers and MOH policy makers are presented in relation to the barriers and facilitators for patients accessing PHCCs in rural and urban areas of Riyadh. Each thematic section ends with a summary of the narratives and associated description. Key findings are presented at the end of the chapter.

Table 5.1 Coding frame examples for service providers and MOH policy makers.

Coding frame example for service provider (1UAMM)				
1	U	A	M	M
No. of interviewee	Classification (Urban/Rural)	Code for PHC	Job role (Manager)	Sex
Coding frame example for policy maker (1PMM)				
1	P	M	M	
No. of interviewee	Job role (Policy maker)	Ministry of health	Sex	

5.2 PHC Service provider findings

5.2.1 Biographical characteristics of the service provider's participants

Chapter 4, section 4.5.3 presents a detailed description of the PHC selected for this study. The table below presents the biographical details (age, gender, nationality, educational qualification, length of service in the MOH) for the PHC service providers that took part in the one to one interviews.

Table 5.2 Biographical details of the service provider's interview participants.

Codes	Age yrs.	Gender	Nationality	Education/qualifications	Length of service in MOH
1UAMM	34	Male	Saudi	Diploma in nursing	7 yrs.
2UAGM	61	Male	Egyptian	Bachelors in medicine and masters in obstetrics and gynaecology	18 yrs.
3UAGF	30	Female	Sudanese	Bachelors in medicine and six month course in family medicine	4 yrs. and 6 mos.
4UANF	40	Female	Indian	Diploma in nursing with midwifery	14 yrs.
5UBMM	24	Male	Saudi	Diploma in medical services management	2 yrs.
7UBNM	31	Male	Saudi	Diploma in health	8 yrs.
8RCMM	49	Male	Saudi	General secondary school certificate	31 yrs.
9RCGM	50	Male	Egyptian	Bachelors in medicine and specialised in anesthesia	15 yrs.
10RCNF	54	Female	Bangladesh	Intermediate in nursing midwifery and midwife	17 yrs.
11UDMM	55	Male	Saudi	Diploma in nursing	21 yrs.
12UDGM	32	Male	Egyptian	Family medicine board	5 yrs.
13UDNF	37	Female	Saudi	Diploma in nursing	18 yrs.
14UEMM	36	Male	Saudi	Bachelors in nursing	8 yrs.
15UEGM	57	Male	Sudanese	Bachelors in medicine from University of Egypt	11 yrs.
16UEGF	43	Female	Egyptian	Bachelors in medicine from Al Azhar University in Cairo	14 yrs.
17UENF	32	Female	Indian	Diploma in nursing	6 yrs.
18RFMM	45	Male	Saudi	Diploma in public administration	25 yrs.
19RFGM	61	Male	Egyptian	Bachelors in medicine	26 yrs.
20RFNF	34	Female	Indian	Diploma in nursing and midwifery	8 yrs.
21RGMM	33	Male	Saudi	Bachelors from College of Shari'a at Al Imam University	10 yrs.
22RGGM	44	Male	Pakistan	Bachelors in biology and medicine from Philippines	2 yrs.

23RGGF	54	Female	Tunisia	Bachelors in medicine	17 yrs.
24RGNF	26	Female	Saudi	Diploma in nursing	2 yrs.
25RHMM	31	Male	Saudi (on sick leave) being covered by Sudanese GP.	Bachelors in medicine and diploma in general medicine	2 yrs. and 6 mos.
26RHGF	33	Female	Pakistan	Bachelors in medicine	1 yr. and 6 mos.
27RHNF	25	Female	Indian	Bachelors in nursing	9 months
28RIMM	36	Male	Saudi	Diploma in health	10 yrs.
29RIGM	31	Male	Pakistan	Bachelors in medicine from medical college, Karachi Pakistan	1 yrs.
30RINF	34	Female	Indian	Bachelors in nursing	7 yrs
31UJMM	50	Male	Saudi	Diploma in health	30 yrs.
32UJGM	34	Male	Egyptian	Bachelors in medicine and master in family medicine from Check Republic University	5 yrs.
33UJNM	29	Male	Saudi	Diploma in nursing	8 yrs.

The table above shows the biographical data (age, sex, nationality, qualifications and the number of years employed at the MOH) for the thirty three service providers that took part in the study. All the PHCC practice managers were Saudi nationals, the majority of nurses (six of ten) were non-Saudi and all the GPs were non-Saudi. The majority of practice managers were educated to diploma level (n=6) (nursing or health care management) one practice manager had a secondary school certificate, two had a bachelor's degree and one practice manager was on sick leave and at the time of the research his role was being covered by a Sudanese GP who was covering the practice administration only. All nurses working in urban PHCC had at least a diploma in nursing whilst those working in rural PHCC two had a diploma in nursing, two had a bachelor in nursing and one has an intermediate qualification in nursing and midwifery. None of the GPs (n=12) GPs were educated in Saudi and (n=7) held bachelors in medicine as well as additional relevant qualification including obstetrics and gynaecology (n=1), anaesthesia (n=1), family medicine (n=3).

Discrimination

Table 5.2 provides biographical details of the service providers. As discussed the practice managers that took part in the research were of Saudi nationality. All of the GPs were non-Saudi, Egyptian (n=6) Sudanese (n=3), Bangladeshi (n=1), Pakistani (n=3) and Tunisian (n=1). Two GPs talked about experiencing discrimination, they explained that this was not between the GP and patients, but it was co-workers that were discriminating against non-Saudi GPs.

...It is very hard to work here...Maybe because I am a Sudanese... Saudis definitely they will treat me and I can complain if something bad happened that I don't like it...but now if I complain nothing will happen and I will be the bad one...No one is helping you know, like for example: If I want to examine no nurse here...No one with me here and if I ask they will say that it is not their role, this happened for me I don't know to write, just reports...I worked with foreigner nurses they are very helpful and very qualified... sometimes I am considering to quit because no respect... the atmosphere here I don't know how to describe it to you...I am planning to quit most of the time, go elsewhere, go back (3UAGF).

The discussion with this GP actually took place when the Saudi researcher left the room. The other researcher/supervisor was of Pakistani origin and therefore this may have contributed to the openness of this GP on the issue of discrimination. The remaining interviews were carried out by researcher which may explain a reluctance to discuss the issue of discrimination. The GP at PHC G discussed the lack of respect he experienced as well as how GPs were moved from one PHC to another which he considered to be impacting on his practice.

There is no respect of doctors here...from up to down...doctors should be respected that is first and then the second thing the doctor cannot stay in one place, he doesn't know, morning he will leave to this centre and he doesn't know when to go to other centre...actually one doctor will understand one area he

knows the patient he knows the environment that particular place he made the idea about with what kind of patient is coming he understand then they will move the doctor to the other place...And this is our both problem, patients and doctors relationship...if you don't give a good environment to a person how can you expect a good quality from them a good result he cannot (22RGGM).

The narratives and description above highlights that the practice managers and some nurses were Saudi nationals whilst the non-Saudi nurses were non-Muslims and said they spoke Arabic. All the GPs were non Saudis, Muslim and said they spoke Arabic. One non Saudi female GP from an urban PHCC explained that she experienced discrimination from Saudi nurses and one male GP said that there was a lack of respect for GPs exemplified by them being transferred from one PHCC to another which in his view effected the patients and doctor's relationship and there's no continuity of care.

5.2.2 Health care provider roles and responsibilities

Findings from this study highlight that the PHC practice managers and the nurses were often performing dual roles due to the PHC being understaffed. This was the case for both urban and rural PHCCs as the following extracts from the interviews highlight.

My role is administrative, I work as a manager of the centre, in addition to my technical work, in case that there is no nurse or pharmacist I do his work to facilitate the work because number of employees is few at these remote centre and there is shortage and the health staff prefer to work near to Riyadh [city] (1UAMM).

One nurse is not enough...I am in charge of two clinics; the chronic diseases clinic and bandage clinic, and I act on behalf of the pharmacist (33UJNM).

...only one pharmacist there...I am covering pharmacy...everything sister [nurse] doing there...sister [nurse] doing lab doing vaccine together...everything doing sister [nurse] there is no lab (30RDNF).

...nurses are covering not pharmacist...health educator is the manager himself...x-ray technician now we give him...another job...one of our clerk is not here...one of our clerk is not here we leave [give] the clerk job' (25RHMM).

All PHCCs had a pharmacy. Both rural and urban PHCC managers explained that when the pharmacist was not available nurses dispensed medicines.

The majority of the PHCCs had a pharmacy. Four (out of five) urban PHCCs had a pharmacist but service providers explained that when they were unavailable the nurses dispensed medicines.

I work mainly as a nurse...all ordinary tasks of nursing, and if there is a shortage in administrative work, pharmacy or personnel department or at any place in the centre I cover it. My work is divided between nursing and management (7UBNM).

I work as a nursing technician...Sometimes I work in the pharmacy, when the pharmacist is not available (33UJNM).

The majority of rural PHCCs (four out of five) on the other hand did not have a pharmacist and medicines were being dispensed by a nurse on a regular basis.

Now I am working as a pharmacist because here no pharmacist is available that is why I am working in Pharmacy and I am helping the other sister [nurse] also, if there is crowding patient I am also helping the vaccination, the dental clinic (20RFNF).

...we have pharmacy, but the in charge is nurse not pharmacist...nurses are covering not pharmacist...health educator is the manager himself...x-ray technician now we give him...another job...one of our clerk is not here...one of our clerk is not here we leave [give] the clerk job (25RHMM).

GPs acknowledged that practice managers had dual roles but explained that they worked close to their job descriptions.

The narratives and description above highlight that regardless of urban or rural location managers and nurses providing dual roles because of staff shortages.

5.2.3 Defining rural and urban PHC

Discussions with service providers centred on whether they considered their PHCCs to be located in a rural or urban as defined by the MOH classification the nature of their role at the PHCC.

The characteristics of rural or urban areas from service provider perspective

The definition of rural and urban for the purposes of this study was based on population density (see Chapter 2, section 2.3.5). It was important to ascertain how service providers viewed the area the PHC was located within, served and what measures they used to form their perspective. To this end the topic guide asked participants views on whether the PHC was located in a rural or urban area.

Only service providers (the practice manager and the GP) in PHC E felt that their PHC was located within an urban area thus corresponding with the study definition of urban.

The area is urban, and it is one of the old areas of Alzulfi...the centre serves three of the areas of Alzulfi...there are some rich people but they are few and there are poor people but the majority are in medium or below medium level, most of them work in the government sector...the educational level is good (14UEMM).

...this is urban area...the majority there financial are good...most of them now working/ employment in Arab departments [governmental departments] and some private...three quarters educated, one quarter illiterate (15UEGM).

The majority of service providers from urban PHCCs felt that their PHC was located in a rural area. The following narratives from interviews with service providers based in urban PHCCs illustrate that they regarded their PHCC to be situated in a rural area.

This is rural area...most of the buildings are roadhouses....the area lack some services, you find that they go to Durmah and Muzahmia neighbouring area...Education level of the ladies is high, most of those who come here are teachers, and they are university graduates, and their financial status is almost excellent...Most of them work as soldiers and guards except for few persons who belong to Al Muqbil (1UAMM).

...It is a rural area...so many foreigners people come to inhabit this area few days in every week...it is a middle class, economical level...and it is not very rich people and it is not very poor...most of the jobs here are private, official shoulders and work for the governments...most of the patient come here don't exceed secondary school (2UAGM).

...I cannot describe it to you, this area lacks all services, and even very simple things are not available, for instance, there are no small stores and simple consumable services and I wonder how their inhabitants live so, I classify it as a rural area...This centre serves the area inhabitants and the majority of our service

users are from the same area, the cases we deal with are cases of the Saudi families and the workers who live in the area, the Saudis are middle class socially...educational level ranges from primary to intermediate (7UBNM).

The area is old and it is considered as rural...agriculture [Handicrafts of the population]...Medium [economic level]...Yes, there is poverty but in a limited range...Their education level is good (33UJNM).

Some of the service provider descriptions of PHCCs located in rural areas were not dissimilar to those presented by service providers from the PHCCs located in urban areas presented above. The narrative extract from a one to one interview with the practice manager at the rural PHC C below highlights this point;

...the area is rural and its inhabitants enjoy all aspects of modern life, and it has all services...Regarding poverty, people are in a good condition...the educational level in the village is high, you find among them engineers, officers and holders of master degree and bachelor degree... some of them serve in the military career or civil career except for very old people and their number is limited (8RCMM).

The majority of service providers based in the rural PHCCs classified their location as being rural and their definition was based on the type of local industry rather than the level of SES of the population. Overall, there was a consensus between the practice managers, GPs, and nurses on how they viewed the local area where the PHCCs were located.

...this area is considered as rural to some extent, urbanisation just starts but the area is still rural...there is poverty to some extent...agriculture [people working in]...the educational level is medium or low (21RGMM).

It is a rural area...The financial level of the people here is not very low not very high...so people are of middle...poverty level is not that much...medium [class] to low you can see...people

working farmers...most of them working in Alaflaj...education is lacking...not illiterate but I think they only have the basic they are not focusing on education (26RHGF).

It is rural...it is called Aldoyan this area the people have a low social economic status...Almohammad and Alhanish this people are a bit good social economic status...all Saudi mostly they are in Aldoyan...they have some lands...they hire some people from other country...educational level for me it is low educational level (29RIGM).

The narratives and description above highlight that all the five rural PHCCs service providers said they were located in rural area while (one out of five) urban PHCCs (manager and the GP) felt they were located within an urban area.

5.2.4 Auditing the service

PHC service providers explained that they did audit their practice and this focussed primarily on patient satisfaction with the service. The way this was done, however varied between PHCCs but the difference in how the audits were carried out was not influenced by the location of the PHC in an urban or rural area of Riyadh. Many of the service providers in both urban and rural PHCCs explained that they measure patient satisfaction verbally.

Yes most of the cases yes I always try to follow-up every patient even this month to see if they are satisfied or not, if they are cured or not and this makes a very strong communication between me and the patients...verbally contact them through telephone (2UAGM).

...there are patients who speak to me and give me their impressions and satisfaction and I take opinions from my people and their families about how far they are satisfied with what is happening and questionnaire is not the standard, In our society

here, if we make questionnaire, 70% or 80% of them will not look to this questionnaire (8RCMM).

We don't have system [monitor the patient satisfaction] like this, but with the patient, we think [check] if they satisfied or not, like that only (9RCGM).

Yes [monitor the patient satisfaction]...if any problem they can complain at least for me...verbally...No [written] (16UEGF).

Yes [monitor the patient satisfaction]...we are doing in their satisfaction and we are doing them nicely...They are not angry with the most...they are happy...verbally only (17UENF).

We don't do so [watch patient satisfaction] but we know this through happiness of the patients about services provided...We find that clear in their happiness, and through meeting patients and speech with them (33UJNM).

Some service providers explained that they do carry out questionnaire surveys with patients;

...we have questionnaire [patient satisfaction] and we have worker specialist for this task he collects all this questionnaire...Every month...in some instance not obligatory to be written... for me as a doctor when the patient make a complaint for me I take this complain I wanted to studied for with my colleague with my manager and I try to solved...not to wait at the end of the month try to solved immediately (12UDGM).

I depended on my own effort and made service questionnaire which is given to the patient to evaluate what is presented to him...at the beginning there was a good response but after that the patient started to refuse filling the questionnaire...but we can see this satisfaction through the relation of the patients with the medical staff (14UEMM).

There is a questionnaire of the centre this questionnaire is available with each physician, general practitioner, dentist, ladies female physician and they all register impression of patients and whether he is satisfied with the physician the employee and treatment we collect these questionnaires and analyses them but attaining satisfaction of people is an objective that cannot be realized...We make it every week (28RIMM).

We have distributed a questionnaire but not continuously... This questionnaire came to us from the Ministry of Health... We have been distributing them from time to time (31UJMM).

We have a questionnaire that we give to the patient... and we make a monthly statistics, and we send this to the sector (13UDNF).

The practice manager and GP at PHC F explained that they did not benefit from patients completing a patient satisfaction questionnaire because only the educated were able to respond whilst other patients refused to respond. Instead a suggestion box was introduced where patients could unanimously submit their views.

We used to give the patient a questionnaire to fill it for satisfaction, but we have not benefited from it... through the box of suggestions and complaints and at public places so that we measure people satisfaction about the service provided to the patients and to give their opinions about the centre without any favoritism...we have a box for complaints which is put in a place in a way that nobody can see when someone complains and nobody can know what kind of complaint he is making (18RFMM).

...We have made this questionnaire at the centre...We have stopped it because only few benefit from it and we have not found enough interest the educated patient responded in a good way to us and the others...they refuse to answer (21RGMM).

As with PHC F above other PHC also audited their practice using suggestion boxes.

Regarding patient satisfaction, we have the employee in charge of the files, and she explores the female patient opinions, as for men we have one person in charge of this issue and I have made a box for suggestions and complaints which you will find near reception hall, and the patient or visitor can put his opinion, suggestion or complain if he likes (7UBNM).

Yes there is one box for any complaints...they can write in paper and put in the box...No [questionnaire distributed] (20RFNF).

...we mention to them that we put a box for any complain...so if any would have any complain even without to show who is he, he can put his complain and leave (15UEGM).

...Yes we [there is] monitor [patient satisfaction]...usually we discuss with each patient about services...all patient here friends for us and with the health team they...can tell us any problem without in shame and we put box for complaints in many places in the primary health care centre (19RFGM).

Only the practice manager at PHC A mentioned that details of patient satisfaction with services at the PHC are required by the MOH as the extract from the interview with him below shows;

Yes, there is a monthly statistics required by the patient relations at the ministry of health, there is a form showing patient satisfaction and the number of minutes of waiting as well as the waiting minutes, obstacles and requirements, this form goes every month...in case of dissatisfaction he writes the reason at the bottom of the paper and the reason is always lack of radiology, lab and dental section (1UAMM).

The manager at one rural PHCC explained the complaints procedure at his PHCC.

Usually we are more asking patient satisfaction directly...But if the patient have complain, or more, they come directly to the manager and they talk and sometime they write in paper and go directly to the hospital to complain (25RHMM).

The narratives and associated description above with service providers at urban and rural PHCCs illustrate that their assessments of whether the PHC was based in a rural or urban area were determined by the local environment which included views on the standard of the roads and facilities rather than population density, the

economic class or educational levels of residents. Overall, there was little difference between the economic class and education level of residents being served by the rural or urban PHCCs. The narrative extracts above also highlight that the practice managers and the nurses are performing dual roles, in other words more than one role at the same time whilst GP's were working close to their job descriptions. On the whole service audits focussed on patient satisfaction but there was however no formal process for collecting information and consequently service audits were unplanned and often initiated by the practice manager. Only one PHCC was completing monthly statistics which the practice manager explained were required by the MOH. For all PHCCs there was little discussion of how the results from surveys were fed back into practice.

5.2.5 Barriers to accessing PHCCs in rural and urban Riyadh

Service providers identified a number of barriers to patients accessing the PHCCs. These included PHC infrastructure, problems with medical equipment, availability of medicine and electronic record system for referral from PHC to hospitals.

Staff shortage and training skills

Section 5.2.2 above has highlighted that some PHC practice managers and many of the nurses were carrying out dual roles. The majority of the PHC service providers discussed staffing issues at the PHCCs, arguing that they were understaffed. As discussed above, this sometimes led to staff carrying out more than one role.

...we have no staff for a pharmacy...we need pharmacist, we need lab technicians...Almost staff shortage...staff is very important, the problem here is finishing contract for pharmacist and lab technicians and they didn't put him instead of Saudi (9RCGM).

...Yeah [need also an extra staff]...I am doing everything I am alone...wanted...one x-ray technician (10RCNF).

...here we let the whole load on the shoulders of the nursing staff who may have no enough experience...there is a shortage in the administrative and technical staff...we also suffer when one of the female nurses take a leave or is absent from work, how can other nurses cover clinics at these three floors...how can one person clean clinics, corridors and bathrooms of this building...Skills are poor here...we send our nurses in courses but there is no control over who gives these courses they make them work between lab, pharmacy and radiology and they come back without getting any benefit from the course because there is no control and follow up... the trainer used the nurse to bring files, samples or results from the lab and radiology section and then to take the medicines tables to the pharmacy, and then asked her to bring lunch...one and a half month and we suffer lack in nursing and the trainer is only concerned with bringing lunch, where is control over the courses and follow up of its production...I focus on the importance of training and following up and evaluation by persons outside training place (13UDNF).

...we have shortage, shortage in everything, the manpower...we don't have enough manpower so we are suffering from this...some of them they are not well trained to do this services...send them to just for trainings and this things will be better for them...and they know how to do their work...this is the main problem now in the primary health care (15UEGM).

...we have shortage in employees...we suffer in the centre, and if the system is damaged or the physician is in vacation, we try to serve the patient in other centres, and we may fail...this annoys the patients, and we cannot serve them, and this is out of our controls... (11UDMM).

...more shortage here of staff...you know one month before...I am alone here...Two staffs vacation...pharmacy, everything I am doing...I am alone imagine this is very difficult...I am requesting from the hospital director I want one staff...we have shortage of staff (30RINF).

In addition, service providers said that the PHC service providers explained the problem with this however was that staff was not appropriately trained for tasks.

...there is no staff trained on withdrawing samples...as for the workers we have a shortage in the medical staff...You may receive a nurse or a pharmacist who left work 5 or 6 years ago, he even does not know to check hypertension, he doesn't know the chronic diseases such as diabetes and others, he cannot give vaccinations (1UAMM).

...we need...physicians and male and female nurses...the best thing to do is to develop skills of male and female technicians and I repeat female technicians, female technicians, female technicians and there are twenty lines under this word... I tell it frankly, you ask the male or female nurse to give an injection, he tells you I don't know, we don't know if he says this because he does not know or this is because he does not like to work (8RCMM).

...There is now obligatory training for every male and female nurse, one month obligatory per year, in addition to courses which last for three or four days and for one week...Regarding male and female physicians and the dentist, they all receive training courses (11UDMM).

...The female nurses have fast training courses also they have courses in case of spread of epidemics and diseases we also had one course on total quality at the hospital...the courses are not regular...the course of quality we took four years ago as for female nurses, they take one to train her for one week, and the rest of the nurses take their turn in the next year, that means one course every year (18RFMM).

...we have a shortage in nursing staff both male and female...We need training and courses, we don't receive courses from health affairs or the ministry...the courses can be held on a quarterly basis...I ask for increase of medical staff or employees (21RGMM).

One nurse explained that service providers at her PHC trained each other;

...everybody's job...trained each other...teaching how is chronic diseases, how to manage the patient who are coming with chronic disease, how to open the files, how to take details,

how to take blood pressure, vital signs, and all the things and that is very weak (4UANF).

Whilst the extracts presented above focus on nurses PHC service providers at PHC G and acknowledged the need for training for GPs and the practice manager.

Medical profession needs training and reading due to the development of medical medicines...training is important to refresh the information and to cope with medical development (23RGGF).

...Saudi manager is not a doctor...It is good to have a highly qualified manager...So it would be better working environment, so he can understand what the problems...we have a lot of persons to work here...but for the work they are deficient...the problem is not in the number the problem is to deliver the work...I think there is lack of training...who is covering the male nursing side is actually a diploma...there is a four years training program but here they have only one year training program...so he don't know to give IV and he have deficient in most of the thing...we need to have a well-equipped system and well skilled person (29RIGM).

...training program for GP and nurses not enough...or helpful for us...not strong to give you more knowledge...shortage of staff and it is many complain in all the centres (12UDGM).

...If they want to develop the health centres, they have to develop the centre manager...I say to the ministry of health develop skills of the centre managers (11UDMM).

Lack of a female staff

The table below shows the number of male and female staff employed and interviewed by each PHCC.4 PHC (urban n=2 and rural n=2) employed a female GP.

Table 5.3 Service provider employed and interviewed by sex at each PHCC.

Governate/ Region	PHC Name	Classification Rural/ Urban	Number of GP	Nationality	Number of Nurse	Nationality
Dharma	A	Urban	1 Male 1 Female	Egyptian Sudanese	1 Female	Indian
Al-Deriyya	B	Urban	1 Male	Bangladeshi	1 Male	Saudi
Al-Riyadh	D	Urban	1 Male	Egyptian	1 Female	Saudi
Al-Zulfi	E	Urban	1 Male 1 Female	Sudanese Egyptian	1 Female	Indian
Al-Kharj	J	Urban	1Male	Egyptian	1 Male	Saudi
Rammah	C	Rural	1 Male	Egyptian	1 Female	Bangladeshi
Al-Hareeq	F	Rural	1 Male	Egyptian	1 Female	Indian
Wadi Al-Dawaser	G	Rural	1 Male 1 Female	Pakistani Tunisia	1 Female	Saudi
Al-Aflaj	H	Rural	1 Male 1 Female	Sudanese Pakistani	1 Female	Indian
Al-Saleel	I	Rural	1 Male	Pakistani	1 Female	Indian

The table below shows the total number of female GPs employed by each PHCC.

Table 5.4 Number of female GPs employed at each PHCC.

Governate/ Region	PHCC Name	Classification Rural/ Urban	Number of Female GP	Nationality
Dharma	A	Urban	1 Female	Sudanese
Al-Deriyya	B	Urban	0	-----
Al-Riyadh	D	Urban	1 Female 1 Female 1 Female	Jordanian Syrian Yemeni
Al-Zulfi	E	Urban	1 Female	Egyptian
Al-Kharj	J	Urban	1 Female	Egyptian
Rammah	C	Rural	1 Female	Egyptian
Al-Hareeq	F	Rural	1 Female	Sudanese
Wadi Al-Dawaser	G	Rural	1 Female	Tunisia
Al-Aflaj	H	Rural	1 Female	Pakistani
Al-Saleel	I	Rural	1 Female	Egyptian

Service providers argued that one of the main barriers to accessing the PHC was the lack of female GPs and nurses.

As for the women, they are seen by a female physician, some time ago when the former physician resigned, we have met problems with the area people and they don't want a man to examine women especially the pregnant (1UAMM).

...physician who serves both men and women as we don't have a female physician...we are in need of a female physician to serve women (5UBMM).

...Regarding medical staff we need another female nurse or two female nurses (8RCMM).

...we have shortage in employees; particularly in female nursing staff...we suffer when one of them takes...sick leave or when one is absent (11UDMM).

...we need staff, shortage of female staff...I am the one covering all area (17UENF).

...we have a shortage in female nurses and also in male nurses (21RGMM).

Sometimes female doctor is absent or on leave...no female ready covering (25RHMM).

I will request for one female doctora [female doctor]...for patient female is coming sometimes they are asking kindly this female...this centre needs one doctora [female doctor]...missing the doctora...[female doctor] shortage of staff and the doctora [female doctor] (30RINF).

No female dentist...There is a male dentist only at the centre (31UJMM).

Despite the availability of a female nurse at each PHC participant highlighted that current staffing was inadequate to meet demand from the local population. The poor availability of a female GP was also clearly perceived as a barrier to accessing services by female patients.

Service availability

As discussed in Chapter 2, section 2.2.6 the MOH classification of PHCCs is based on the services they provide. The majority of PHCCs in Riyadh province are classified as B3 and defined based on having a laboratory, dentistry and residential facilities for the nurses and the GPs. All the PHCCs selected for this research had a B3 classification and should have therefore had the associated services/facilities. Despite the B3 classification interviews with the service providers revealed that many of the PHC did not have the services necessary for a

B3 classification. Table 5.5 below provides a breakdown of the services provided at the PHCCs.

Table 5.5 Services provided at PHCC with B3 classification.

Governate/ Region	PHC Name	Classification Rural/ Urban	Services Provided	
			Laboratory	Dentistry
Dharma	A	Urban	No	No
Al-Deriyya	B	Urban	No	No
Al-Riyadh	D	Urban	Yes (Manager said only small one for diabetes and CBC and the analysis for pregnancy which means simple things while other investigations are transferred to the referral lab) (GP said laboratory only on female section) (Nurse said there is a lab which does not serve the purpose)	Yes (Manager said dental section is at the women section and it has a female doctor who only examines women and never deals with men, and even she does not deal with a child above ten) (GP said dental clinic only in female section)
Al-Zulfi	E	Urban	No	Yes
Al-Kharj	J	Urban	No	Yes
Rammah	C	Rural	No	No
Al-Hareeq	F	Rural	Yes (Manager said the lab is available and it is furnished, but there is no technician, we send samples to the hospital lab at Alhariq [hospital] and in the next day the result comes) (GP said we have lab clinic [laboratory] but there is no technical [technician]...now almost about five years there is no technical [technician] for lab we take blood samples by female nurse and they send it to hospital)	Yes (Manager said there is a dental clinic and there is a female dentist working on it) (Nurse said dental clinic yes doctora [female dentist] is doing dental procedures)
Wadi Al-Dawaser	G	Rural	No	No
Al-Aflaj	H	Rural	No	Yes
Al-Saleel	I	Rural	Yes (Nurse said Yes [we have lab] lab sister [nurse] are doing, we don't have lab technicians)	Yes

Service providers at the PHC that did have the laboratories required for the B3 classification pointed out that they were not functioning effectively because they did not have a laboratory technician.

...we have...dental section, radiology section and lab...The lab is available and it is furnished, but there is no technician...we send samples to the hospital lab at Alhariq [hospital] and in the next day the result comes (18RFMM).

...we have...lab here...Other than lab we have x-ray...but until now it is not functioning (26RHGF).

We have one lab here...we have pharmacy...we have dental clinic...they have provided the x-ray machines and the x-rays may be from the past I don't know but they said that they had the facility before but right now we don't have the technicians for that to do the x-ray...we don't have the technicians actually, but we have the machines...nutrition [no we don't have]...we don't have physiotherapy here (29RIGM).

One of the PHC that had a laboratory and a technician were only able to carry out basic investigations and service providers explained that where more complex investigations were required patients had to be referred to hospitals.

...we have lab clinic [laboratory] but there is no technical [technician]...now almost about five years there is no technical [technician] for lab we take blood samples by female nurse and they send it to hospital another investigation stool and urine patient should go to hospital only this is the difficulty of services in the primary health centre complained by patient...Difficulty only in lab investigation not available...take sample blood and they send to hospital twice daily in one week (19RFGM).

...we have a pharmacy, radiology and a lab...only small one for diabetes and CBC and the analysis for pregnancy which means simple things while other investigations are transferred to the referral lab, and the virus analysis is transferred to King Saud hospital in Shumaisi...samples are taken weekly and sent to the referral centre for investigation, and when the result comes to us, it will be given to physician (11UDMM).

Overall the service providers regardless of rural or urban location explained that they were under resourced in terms of the type of service available. The majority of the PHCCs in this study did not have laboratories required for the MOH B3 classification and also went on to explain that they lacked other basic services such as radiology, dentistry facilities and services for nutrition and physiotherapy. The PHC service providers interviewed argued that this compromised the quality of the service they could provide to patients as the following extracts from interviews illustrate;

...yes of course we have a pharmacy, but we don't have radiology and we have no dental section, many of the patients complain because of this and also we have no physiotherapy...patient always...suffer from lack of dental section and laboratory...we don't have nutrition section (1UAMM).

No x-ray...also dentist...no physiotherapist...wanted this one lab...dental (10RCNF).

...No [don't have x-ray]...Yes [have pharmacy]...No [physiotherapy]...No [nutrition]...Yes [have a dental]..No [have a laboratory]...Laboratory is not every day...he is taking the sample and he went to the hospital...Two days every week [he come to takes the sample] (16UEGF).

Yes there is a pharmacy...there is no physiotherapy... we don't have a nutrition section...Dental section has been stopped for one and a half year, and radiology section has been stopped for four years (21RGMM).

The lack of a laboratory was seen as a problem because it delayed diagnosis as patient's samples had to be sent away for analysis and consequently treatment for patients was delayed. The GP at PHCC discussed that the absence of a laboratory meant that patients have to be sent to the hospital serving the area which was approximately 27 km away from the PHC. Service providers repeatedly referred

to the need for a nutrition department within the PHCCs to help with increasing rates of chronic conditions within the population. One GP discussed the need for smoking cessation services.

...we have dental clinic...Yes [have pharmacy]...nutrition department no...The main we have no lab here...we have no x-ray...because of these two problems we refer the patient to lab and x-ray outside (32UJGM).

...we need x-ray and lab...this very important to make lab and x-ray to help people here because more patients need that and we send him to Rimah, this make problem for the patients sometimes they don't have the car... No [dental clinic] (9RCGM).

...we need the specialised clinic for smoking giving up (12UDGM).

PHCCs facilities

PHCC infrastructure

Service providers also discussed poor PHCC facilities as a barrier to patients accessing services. The physical condition of the PHCC buildings, furniture and equipment used was seen as inadequate by the majority of participants. All of the PHCCs were housed in very old buildings, primarily houses which were rented from the local community. They were furnished with old furniture and GPs and nurses were using out of date medical equipment and discussed the importance of having purpose built PHCCs owned by the MOH as the following extracts from interviews highlight;

The first thing is buildings of the centre the rented buildings do not make the desired purpose, and they do not fulfil the required services, but the government centres fulfils the conditions and complete the needs...also availability of the car parking helps the patient...we say that the building is the main obstacle...(11UDMM).

...This building is rented and it does not contain even 1% of the capabilities that qualify it to be a suitable building for a health centre...all patients complain...The biggest obstacle is the bad building, how can we provide a good service in such a building...I repeat saying that the building is the first thing that the patient sees, and if he feels that it is comfortable to him, he will respond to treatment and interaction with his appointment (13UDNF).

The building is rented and has no large capacity...There are many obstacles but the most significant among them is this old rented building which is unqualified and does not give us any chance to improve...also lack administrative furnishing such as offices and systems (14UEMM).

...this is the house...so this is not well structured and not well equipped as to be for the government service as health care...this is an old house and rented from the people...I think now the government is going to establish new buildings...specially for the primary health care centres...We can tell it is not...well-equipped because as I told you this is...normal house not built specially to be as primary health care...first we need...to have place suitable for the primary health care services in the structure and the rooms and everything (15UEGM).

...two clinics in one room...there is no enough room for separate clinic for health services in female department (19RFGM).

...these buildings are rented and not qualified as health centres you find the rooms in them are small and sometimes two persons work at one room or we have two clinics in one room and this is one of the obstacles in provision of care to patients, if building is professional like the present government buildings, it will be good. We have them here for five or six years but still not used. I don't know what the problem is (28RIMM).

...actually, in this centre we are working as in combination like we are working two dispensaries right now because we have some issues one dispensary...right now the construction is going on (29RIGM).

The practice manager and nurse at one of the PHC explained that a new purpose built PHC was ready to move into but they had not yet received authorisation to do so and could not explain why this was the case.

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...one room only for vaccination, chronic adult patient...at least vaccination need one place...they are asking when we will go that new place everybody want to ask because this is the old one...when they will shift to new dispensary and I think everything is available there (17UENF).

The service providers interviewed called for purpose built PHC (referred in the narrative extracts as government centres because they are built on and by the MOH). Current MOH strategy is to move all PHCCs to purpose built premises. Interviews with some of the service providers highlighted that this process was underway, but the transition to the new purpose built buildings had not taken place at the time of the fieldwork for this research study.

...building also we need better than this one...They are doing new building but till now I think it's three years they are doing building for primary health care (16UEGF).

...the new government centre which is under construction, and this includes a dental section but there is no radiology...patient always suffer this problem and they suffer from lack of dental section and laboratory and they also complain of referral problems...in the new centre the services developed and health standard is high...the equipment and capabilities available there such as laboratory, dental section...even patients who follow their cases with us now ask when will you go to the new building (1UAMM).

We only need a government building because our present building is rented and at the new government health centre, we will guarantee that 99% of the patient needs will be available (8RCMM).

Service providers pointed out that the lack of a purpose built PHCCs had an impact on the number and quality of services they could provide patients.

...the centre is rented and it has no lab or pharmacist and the most important aspect is maintenance (18RFMM).

...two clinics in one room...there is no enough room for separate clinic for health services in female department (19RFGM).

...also we have shortage in the number of rooms because the centre is rented and does not fulfil the requirements there is a new government centre which we hear that it will open and it has one room for each clinic here the place is small and we combine several clinics in one room...Each of the lab and radiology systems [equipment or machines] has a room dedicated to it but we don't benefit from them as they are not effective and the systems [equipment or machines] are very old (23RGGF).

Key conditioning I told you good furniture...furniture's not good here...maybe, nowadays, preparing for another primary health care...new primary health care centre maybe are putting these maybe will be coming new furniture (4UQNF).

...we need the specialised clinic for smoking giving up (12USGM).

...this is the old house as you see not a centre for medical services (32ULGM).

Problems with medical equipment

Service providers regardless of urban or rural location pointed out that the equipment at PHCCs was old and required updating. Interviewees explained that old equipment was inefficient and was consequently impacting on the quality of the services they were providing. This was the case for all types of equipment required for the PHC to function efficiently;

...the systems we have are below the standard and they do not work effectively the medical systems, the medicine fridges...advanced system we have received is for oxygen and it is not working and needs repair (5UBMM).

...We also have a radiology section, but the radiology system[equipment or machines] does not work and needs maintenance...the dental clinic lacks some systems, and in the radiology section the systems [equipment or machines] were broken down and there is no replacement (21RGMM).

All equipment available in the primary health care, such as the hypertension measurement machine, diabetes check machine... we have the machines, but we are looking for more so that we can have alternatives in case of damage (11UDMM).

...system are broken [lab machine or equipment]...for more than six months...The radiology section has an old system [equipment or machine] which is broken down for a long time and there is a room devoted to it and there is no staff I don't know if there is a shortage of technicians or the system [equipment or machine] is broken down. I don't know exactly (23RGGF).

There is a dental section and its systems [equipment or machines] are broken down and it is useless... As for the equipment they are available, but they are old and broken down...some of the systems [equipment or machines] are broken down and old such as the weighing and height measuring system [equipment or machines]...we have requested for getting a replacement but has not been provided so far (24RGNF).

In some cases, participants that said that poor quality equipment were having serious consequences for the investigations and treatment that they could offer their patients. One female GP (3UAGF) explained that;

...advance equipment...before 12 weeks you can listen fatal heart beat with it [machine] but here I cannot, I cannot hear if fatal heart rate is ok and I cannot decide whether to refer or not (3UAGF).

Another manager highlighted how at their PHC (8RCMM) they had to compensate for a poor ambulance service by using his own private car.

...sometimes patients come to us and we have an ambulance, but we feel in some cases that the ambulance may not serve the purpose, and in this case we take him in our private cars with the physician and nurse, In some cases we took patients very fast and he or she was saved due to speed (8RCMM).

Service providers explained that the problem was with the maintenance of the equipment and that there were often delays for new equipment.

...my recommendation is to repair equipment's and supplying these things and to follow up on this service (15UEGM).

...if something is out of order...so immediately the driver takes it to the hospital for replacement or for new equipment (26RHGF).

Actually the CBC machine [complete blood count]...and the other is already out of order...already complain more than month no reply no replacement (22RGGM).

x-ray...now it is not working and there is some problem in this machine and this is for long time...we are requesting from the hospital, but the process will take long time, hospital in ministry...Not all [equipment's] in good condition there is a shortage...shortage in this equipment also there is delayed...when we are requesting long time it will come...It takes time...also maintenance of this equipment also is not done immediately (25RHMM).

Availability of medicine

In addition to the problems of old equipment, delays in requests for repairs to existing equipment and new machines, some service providers regardless of job description or urban or rural location discussed shortages in medication.

We don't have a lot of medications here, we have just a list, even in this list, we don't receive it all (3UAGF).

...Type of medicines are not satisfactory and most of them complain of this issue which means quality of medicines (5UBMM).

...not all medicines are available with us...we have preventive medicines only at our centre (8RCMM).

...not all medicine coming through on primary health care centres (9RCGM).

...also the medicines are not available permanently...many medicines are stopped from centres (13UDNF).

...we also have a shortage in medicines and some of the medicines are not available (14UEMM).

...medicines sometimes not available...one multivitamins...it is two months finish now not available (30RINF).

There is shortage in some medicines, and they are not available all the time, If they are available at the centre, we can give them to the patient instead of sending him to hospital (31UJMM).

There were almost an equal number of service providers however who said that medication was not a real problem. However some of these respondents did argue that availability of the type of medication varies.

The medicines for the primary health care centre it is up to the mark...have a lot medicines and everything is available (29RIGM).

Regarding medicines, they are available...there is no shortage or deficit (7UBNM).

...medicine are available...because every month it comes from hospital...quality of medicine is ok (26RHGF).

The main medicines such as those used at the centre for chronic diseases which the centre consumes in large quantities are available, but some medicines have shortage sometimes, for instance vitamins have been unavailable for four months (21RGMM).

most of the important medicine are available but there are some drugs we need like to lower the cholesterol level...Aspirin...recently not available some antibiotics...analgesic local but also not present (32UJGM).

As for basic medicines they are available no shortage especially for chronic diseases (23RGGF).

...we have just this certain medicine not all the medication is available here (25RHMM).

One service provider from a rural PHCC mentioned that patients are sent to the referral hospital in Durmah to get medication if it not available at the PHC. The hospital in Durmah is approximately 30 kilometers away.

...even if there is shortage in medicine the patient can purchase it from his own money, only give me an excellent prescription but it is difficult to have a diagnosis without examination and without lab and radiology it is difficult for the doctor to give medicine without investigations and analysis...the patient tells why I come to take the hypertension, cholesterol and heart medicines from you then you suddenly stop them and tell me go to Durmah is not my business, what is important is my convenience...Other factor which are good for patient to find medicine on time (1UAMM).

Electronic record system for referral from PHC to hospitals

The service providers at both rural and urban PHCCs discussed at great length the referral process. Referral from PHCCs to hospitals was the responsibility of the GP, but the administration related to the referral process was carried out by the GP and in some cases the practice manager who scanned the form and emailed it to the hospital. Where computers were not available the referral letter was given to the patient to take to the hospital. Only one of the PHC selected for this study had a clerk for referral (12UDGM).

Referral is the job of the doctor (10RCNF).

...so if they really clinically we think should be referred to the hospital for better care...we refer the patient I write the referral...with my signed stamp and with manager stamp (26RHGF).

I write referral form...manually...before we only use paper for prescription but now there is computer (32UJGM).

...Doctor written request and then go to specialized worker insert this data on the computer system only referral to King Saud Medical Hospital...Only for dental care [refer to other primary health care centre]...don't have a dental doctor in male section only female dental doctor for female section (12UDGM).

For many of the PHC service providers this was a laborious task because all documentation was completed on paper rather than an electronic system;

We have not used the electronic referral, we have the paper referral only (1UAMM).

...we refer manually I am writing in the paper...I think two or three months they introduce a new way to refer...computer (22RGGM).

The extract from the interview with the GP at PHC C highlights the possible delays that result from the current paper referral system.

...we refer the case for because they need specialist and another time we sent him to because we have no investigation and the patient cannot go coming in the same days and they need treatment and we send him by referral paper and we are waiting for the response of the referral paper the specialist to return...what is diagnose of the patient, what treatment he need for follow up (9RCGM).

...we make referral manually but the hospital has no more crowd and many patients do not want to be transferred to Alhariq hospital and for this reason they go to Alhota hospital in a name of a visitor and take medicine, now we have got approval for referral to Alhota hospital for specialties which are not available at Alhariq Hospital (18RFMM).

By paper [referral]...No computer now they are started, I don't know more about that (17UENF).

...the referral system we have is new at the ministry of health and it is based on computer through the network...I think that there should be connect between the health centres specially at this area and among the outpatients at WadiAldawasir general hospital...I believe that efforts should be consolidated and this connection will help the centres to convey its message (21RGMM).

There were signs of the referral process being modernised as some PHC service providers explained;

...this year...they started to refer through by a internet...filling the form and then we have one staff who is working at the computer he is referring through the internet...Yes we use a computer (29RIGM).

...writing this referral paper and then doctora [female doctor] give this to one staff...computer staff only referral responsibility (30RINF).

Referrals are made manually, so far (31UJMM).

Referral form is their doctor will fill that and they will sign that... computer referral [email] is there (27RHNF).

The extracts from interviews with service providers highlights the needs for an electronic patient record system which would help PHC staff to access patient records and refer patients to hospital as necessary. They discussed those poor patients' records keeping and communication delays between PHC and a hospital was leading to delays in treatment. Participants from PHCCs that did not have access to an electronic referral system called for improvements to the service. They felt that this was particularly necessary for patient history and referrals to hospitals.

...I want a complete communication between me and the hospital, not paper work...if I have communication for example by internet which is the first example equipment in this century between me and the hospital...doctora [female doctor] or me don't have time to write paper work...I want an electronic system for it. So, why not put it available on my computer...special software for introducing data of every patient, every disease, every medicine (2UAGM).

We transfer him but we suffer because hospital does not provide us with his diagnosis or treatment and we don't know if their diagnosis is consistent with our diagnosis or not, his file remains incomplete in the centre, and sometimes he dies and they don't

inform us If patient does not go on his appointment to hospital they refer him to us to make a new referral while it is reasonable that they make appointment directly to him at hospital instead of wasting time of patient which he urgently needs...Transfer is written by me manually, and then the manager signs it, and sent by fax to the hospital, and the patient goes to his appointment...We transfer to WadiAldawasir general hospital and it is about seven to ten kilometers away from here (23RGGF).

...The best way to serve them is electronic link as this will help much in diagnosis and discharge of medicine and fast referral, this will lead to minimising effort and time between physician, patient, pharmacy and nursing system (7UBNM).

The patient is transferred through an ordinary paper manually I have heard about a new referral system, which is the program of the ministry of health through the computer and I have heard that it is applied in other centre but it has not been enacted here (33UJNM).

Some of the PHC had moved onto using the electronic system for referral but indicated that poor internet supply was sometimes hindering efficiency.

Referral is now made through computer...If they link the centre as a whole with a computer network for communication and for data entry between the files, the lab, the radiology, the clinics and pharmacy, we will provide faster and better service to the patient (13UDNF).

...for three months we have been using computerised referral (14UEMM).

...they are supplied us with the computer services for referral...but also we are suffering from the net service (15UEGM).

We have referral through the known referrals system and the referral system for our centre electronic link allows transfer only to Al Aiman Hospital and to Alshifa Dental Centre...I make referral electronically...The referrals system is programmed on the system and it requires some procedures (5UBMM).

Issues around service improvement centred on enhancing facilities and providing health education for the prevention and promotion of illness and the conditions of the rented buildings.

...referral letter is made from the male or female physician who thinks that the patient has to be transferred to a specialist...I only sign the referral and stamp it to show that it is from Alramhiya Centre only (8RCMM).

The narratives and associated description above show that PHC service providers explained that staff shortages were leading to practice managers and in particular nurses carrying out more than one role and that existing staff were not trained for these tasks. The lack of female GPs and nurses was also seen as a barrier to patients accessing the PHCCs. Despite a B3 classification the service providers explained that there was a lack of service availability which compromised the quality of the service they could offer patients.

The narratives extract from interview with service providers above show that the lack of availability of medicine generally and the type of medicine available was seen as a barrier to providing necessary PHCS. There were also no clear differences in the availability of medicines between rural and urban PHCCs.

In addition to services the PHCC facilities were considered as a barrier and participants called for new purpose built premises. These were being built in some cases, but interviewees explained that construction was taking a long time. In the two cases (17UENF) and (28RIMM) where the new PHC had been completed,

already the practice manager and the nurse were unaware why they had not been authorised to move to the new building.

5.2.6 Facilitators to accessing PHCCs in rural and urban Riyadh

Respondents identified a number of facilitators that they considered supported patients with accessing the PHC. These included distance and transportation to the PHCCs, PHCCs opening hours and waiting times, language and religion and availability of segregated spaces for women and men.

Distance and transportation to the PHCCs

The majority of PHC service providers from urban PHCCs said that the distance between the PHC and patient homes and transportation to the PHC from patient homes was not seen as a barrier to patients accessing and utilising PHC services. The majority of the urban PHC were located in the heart of the community they were serving.

Distance is not an obstacle because the area is small...houses is five minutes away from the centre (1UAMM).

I think that location of the centre is bad and not suitable in terms of transport for workers and patients (13UDNF).

...no [transportation barriers] actually because the primary health care centre among the area...it is very near so it can help most of them especially the females...they are not suffering to be transported...it is very near to old people to come because most of them chronic disease they are old (15UEGM).

The service providers in two of the PHCCs located in the rural areas also said that distance between the PHC and patient homes and transportation to the PHC from patient homes was not a barrier to patients accessing the PHCC because the PHCC was located close to the community residences.

The centre location is suitable, and it is located in the middle of the population...there is no obstacle for transport (18RFMM).

There is no any problem and very, very good the place of the centre (19RFGM).

The majority of the service providers from rural PHCCs said that distance and transportation was only mentioned as a potential problem by PHC staff at three rural PHCCs (G, H and I) and was an issue for patients living outside the immediate vicinity of the PHC.

...some people yes some people complain of the long distance particularly those who live behind the highway and the main road...therefore a large number of the patients asked to transfer their files to other centres near to their residence (21RGMM).

The extracts from interviews presented above highlight that although the PHCCs were all located with the communities they served for rural PHCCs distance and transportation from home to the PHCC were seen by service providers as being a problem for patients accessing the PHCCs.

Service providers regardless of urban or rural location, did however discuss how the distance between the patient's homes and hospitals that they were referred to from the PHCC for further treatment was a problem.

Laboratories was transfer to Al Muzahmia hospital which is 7 kilometres away, and this hospital refuses our referral and asks us to go Durmah hospital which is 30 kilos away because we reports administratively to Durmah (1UAMM).

...the nearest hospitals belonging to Ministry of Health which we refer to is King Saud hospital and it is far away, and we tell the patient that we refer you to it, but they refuse (13UDNF).

...such as hypertension, diabetes and asthma for their investigation, we have transfer system and we belong to Alhariq hospital which is 20 kilometers away (18RFMM).

...this primary health care centre is far from the hospital... sometimes also this transportation are a problem when we want to take the patient to hospital...Applied general hospital...it is 65 kilometres (25RHMM).

Yes, [we refer]...Alaflaj hospital...It is 75 kilometres from here...(26RHGF).

Actually, this primary health care centre belongs to the Alsaleel hospital It comes under Alsaleel general hospital...General hospital it is around 2 to 3 kilometers from this centre (29RIGM).

PHC opening hours and waiting time

Opening times and waiting times varied between PHCCs. All the rural and urban PHC were opening at least once a day between 7.30-4.30pm. To ensure that patients from two of the rural PHCCs could be referred to hospitals which were some distance from the PHCC and patients' homes, two PHCCs (PHCC C and H) were opening twice a day between 7.30 am to 12.30 pm and then 4.00 pm until 8.00 pm.

Work hours of the centre is from 7:30 am – 4:30pm...patient are absolutely satisfied and I think that this most suitable for them, and I have not seen any complain about this issue...(5UBMM).

...working hours it is morning from 7:30 am and to 12:30 pm...evening from 4 pm to 8 pm... (25RHMM).

Once patients have accessed the PHC participants argued that they were seen quickly.

...there is no waiting time the waiting is for 1 to 2 minutes and it is for 10 minutes as maximum (8RCMM).

...we don't have waiting time...doctor sees patient in 1 or 2 minutes as maximum and if there is a patient inside with the doctor, he may wait for up to 5 minutes (5UBMM).

From ten minutes to quarter an hour [waiting time] in case that the male or female physician examines another patient if no patient's physician will examine him immediately (24RGNF).

...Maximum we have 5 to 10 minutes waiting time for the patient (29RIGM).

...Not more than 20 minutes [waiting time]...this is the maximum (32UJGM).

Service provider-patient communication

There were differences in service provider (based on job description) views on service provider-patient communication. Many of PHCC managers regardless of urban or rural location explained that language and religion were not seen as a problem for patients accessing the PHCCs. They argued that there was language and religious compatibility between patient and staff at the PHCCs because the majority of staff (regardless of nationality) were fluent in Arabic and were Muslims and this facilitated good service provider-patient communication.

Language is not an obstacle because the physician speaks Arabic, the female physician speaks Arabic, and the male and female nurses speak Arabic also there is no any problem as related to language (1UAMM).

Communication is good with patients...although the physician is not an Arab and the patients are uneducated information and communication between physician, nurse and the patient is alright and no need for any person to interfere (5UBMM).

No religious or linguistic barriers in the centre and our medical staff speak Arabic and we have no problem with the Saudis, the problem appears when we deal with patients who don't know Arabic or English and most of them are home workers (14UEMM).

As for language there is no obstacle because the medical staff are old and they speak Arabic, and some of them know the inhabitants and the patients and they know their diseases and have built with them friendship and relation (18RFMM).

Language is not an obstacle because employees working with us speak Arabic there is no problem in this regard...workers at the centre are all Muslims So, there is no religious barrier (21RGMM).

For one practice manager and some of the non-Saudi nurses and GPs regardless of urban or rural location communicating with patients in Arabic was a problem early in their careers and for some language barriers continued to affect communication.

...patient are not satisfied with other doctors because they said they don't know the language...they did not understand us, they are saying like this (25RHMM).

...when I came here they should provide us some basic language...they should provide us a translator...I learn by myself...it takes lot of months...No not at all [culture and religious barriers] (29RIGM).

...First time I have a language problem...maybe one month, two month very difficult this Arabic...Now no problem...No [culture and religious barriers] (30RINF).

...As for me yes it is good [communication between me and the patient]...For Saudi no language problem, but for non-Saudi maybe a problem in some instances in some driver doesn't speak Arabic and English...not at all [religious problem] (12UDGM).

Yes, there is a language problem...for me it is more easy for me better than the others...but for the other doctors they feel this problem doctors and other nurses even between the staff...Saudi and foreigner staff...they also must see this

language barrier between foreign doctors and the natives (25RHMM).

Segregated spaces for women and men

All the PHCCs had segregated spaces for women and men as required according to Saudi cultural/Islamic norms which prohibit social mixing between unrelated men and women.

...separated that door is for women only and this one is for male only men are not allowed to get inside...very separate (4UANF).

Our centre is divided into a section for men with its entry and a section for women with its separate entry and it is separated from the men's section in waiting, and in medicine and file discharge (5UBMM).

As for the girls they have their section which is separated from men's female entrance is from that side and male entrance is in front from where you came...and the female waiting area here is there is a complete separation of the female – from male area...and the male are not supposed to enter that female area it is written in the door...and there is a separate entrance in dentist also for male and female...totally separated (26RHGF).

We have a special section for ladies with its entrance there is a waiting hall and a place for performing prayer there is a waiting room for men and it is separate from the women's section, noticing that the building is leased and not a professional building, the women's section is completely separated from men's section (28RIMM).

The narrative and description above highlights that whilst distance and transportation to the PHCC from patients' homes was not a problem because the PHCCs were located in the communities they serve the PHCC service providers highlighted that distance and transportation to the allocated referral hospitals was a cause of concern for patients and in some cases delayed recommended investigations and treatments. PHCC service providers felt that the PHCC opening and waiting times enabled patients to access the PHCCs and services. All PHC service providers spoke Arabic and although not all were Muslim they did not see

this as preventing patients accessing the PHCC or services. The availability of segregated spaces for women and men as prescribed by Islam also facilitated patient access to the PHCCs and services. There was some discussion of discrimination during the interviews but this was between non-Saudi GP's and Saudi staff.

5.2.7 Developing services

Discussion about developing the services at the PHC focussed on improvements to PHCCs which included improved medical equipment, more focussed health education through prevention and promotion programs. Service providers also discuss wider service planning and delivery issues.

Service improvement

The majority of the respondent's regardless of job description or urban and rural location, wanted improvements to the equipment available at the PHC which included updating outdated computers/installing an electronic communication system and new medical equipment.

...also we want to use the computer for prescriptions because most hospitals use electronic prescriptions in a way that when a physician sees the patient and gives him the prescription through a computer, the patient has to go to the pharmacy and take medicine without holding papers and we in this centre still use paper prescriptions (7UBNM).

The most important significant item we need is the computer, it performs fast service and it helps the employee and the patient...we depend on paper and this is one of the things that we hope to be provided at the centre (11UDMM).

...If there is connection through a computer network it will be possible to control the discharge of medicine... if there is a computer system showing name and card number (18RFMM).

...We have problem of the lack of advanced communications such as computers and email...the world now deals through emails and the scanner does not require networks or others, In fact we suffer from this and we would like to catch up with modern technology they complain that there is no network they are only simple telephone lines but no maintenance...If Internet and computer are available this will lead us to get rid of many things and will facilitate the work of the centre and the patients (33UJNM).

All service providers were clear that an improved computer system would help them to keep better patient records and enhance communication between the PHCC and hospitals. Several respondents also requested new medical equipment for their respective PHCC as the extracts from service provider interviews below highlight;

...for bronchial asthma, I eager for this spirometer which is a very cheap equipment but it's not available here...for example, for diabetes we have only one equipment...I hope several equipment available here and this is not present (2UAGM).

...We have only diabetes investigation system which can be used by a nurse or physician, and this is a simple system which may be available at houses (8RCMM).

Deficiency of facilities...medical services...like someone investigation we don't have ultra sound...but we have no screening device no screening facility (12UDGM).

...there is shortage in some items...Every day we face problems of lack of equipment and...we have a shortage in medical system [equipment]...We have a shortage in the machine of hypertension and diabetes (14UEMM).

...we should have also ultrasound...we need for more [equipment]... like blood pressure apparatus (16UEGF).

...more equipment also not available here...we feel also a shame and if the patient will and do come and ask about something we don't have (17UENF).

...we have a dental clinic which does not work because of shortage of some systems [medical equipment]...I ask for services for the centre such as ambulance to serve the centre and the citizens and I find no response...we try to run the work with the systems [medical equipment] available we have shortage in medical systems [medical equipment] (21RGMM).

...sterilization should be here in male side same there is in female side...sterilization of equipment...there is no stethoscope and then after that I bring my stethoscope here...actually the stethoscope which is provided primary health care centre is not a standard stethoscope (22RGGM).

...staff there is a shortage in the systems [equipment or machines] do you believe that the centre has no ambulance and there is no car or a driver...moreover, there is shortage in advanced systems (23RGGF).

Respondents pointed out that requests were made for new computers and medical equipment, but the applications were rejected.

As regards the equipment's unfortunately we apply for items such as system [computer], new ambulances, new service to the centre and the application goes and it is rejected (1UAMM).

At one PHC (13UD) a female nurse explained that it is easier to obtain medical equipment if there was direct communication and ...'if you know one of the warehouse officials' (13UDNF).

Providing health education

Service providers identified that the key conditions common in their catchment areas as diabetes, hypertension, asthma, obesity and some of them mentioned infectious diseases such as (smallpox, hepatitis and AIDS).

We have a high percentage of hypertension and diabetes, and this is our most important issue...without health education patient will not come (1UAMM).

...chronic diseases, this is the main population which chronic diseases means diabetes, hypertension and bronchial asthma,

this is the main number of patients who come here...complete absence of health conscious as you see and food, bad food habits this is the too many problems...health education this is provided by all personnel...this is a very important issue here (2UAGM).

...chronic diseases is common...such as diabetes, hypertension, asthma...I hope that they make intensive training courses for male and female Saudis...it is better to hold programs which are compulsory and not optional...we receive pamphlets related to several diseases and about vaccination and AIDS, and some of them are related to health education, and every year we distribute them to homes and schools (8RCMM).

...high percentage of people have obesity we have no educational program...No [dietician]...Yes [we do the education]...For us facilities or educational program...and this our seek educational program and our facility all these two we need (12UDGM).

PHC service providers regardless of urban or rural location acknowledged that there was poor knowledge of prevention, management of chronic conditions among their patient populations. They explained that they provided some health education at this as not in an organised and sustained manner.

...The problem is lack of health awareness of mothers...The health education is provided each physician and nurse individually...we don't have a special clinic for health education...The brochures which we give the patient it's done from our own personal efforts and from our own money...I printed cards to the patients at my expense showing name of the nurse [patient] and her file number and diagnosis, and I have provided her with their numbers and put in the clinic (13UDNF).

In the centre we have activities and we distribute pamphlets periodically...we work through personal effort and there are volunteers who support the centre with periodic brochures (14UEMM).

...we try to treat the chronic diseases...we have continuous and accurate follow up for chronic diseases such as hypertension, diabetes and asthma...Every employee conducts health education in his own field, we had one health education

employee but he was transferred from here and we have no replacement...I believe that the most important aspect in my opinion that can serve the society best is family medicine...I would like to provide a service to a patient who is unable to get to the centre...I want to serve him at his place, If family medicine is available for us the task will be easier...I believe that family medicine can be applied in the rural areas...I would like to do something with which the society is interacting, but I can't I have no brochures, and their effect as you know is great...If brochures or books about chronic diseases and about diseases general or nutrition advices we would distribute them among the people, schools and homes (18RFMM).

...as for health education we practice it through our work and during treatment for the patients...with each case and chance we speak about health education (23RGGF).

The majority of the PHC regardless of urban or rural location did carry out health education as part of their practice, but this was as part of routine practice and by the GPs and nurses. PHC service providers recognised the need for more knowledge on prevention and management of chronic conditions because there is a 'complete absence of health consciousness as you see and food, bad food habits this is the too many problems (2UAGM).

...we give them lecture...we are calling also the patient, so they can come (10RCNF).

every patients also we are teaching and every month...we are giving the leaflets to all the patients, then, they will come, we will give encouragement...Health education should be increased by teaching the patients about preventing diabetic main problem...obese patient (4UANF).

...Each employee here makes in health education through his work and educates other according to what is permitted by his work and we don't have specific person for education...Every patient visits any of the centre employee, he gives to him a piece of information or gives him a book which is considered as part of the education...this takes place at centre and schools and among the vaccination campaigns and home visits and distribution of brochures about the diseases and epidemics which spread at the given time (5UBMM).

...Sometimes we have project like a scientific day for some diseases last year they have made here a field hospital with a number of specialties women, female physician, orthopedics, internal medicine and chronic diseases for one week they made for us brochures and advertisement this was made in Alsalamia and then shifted to other centres...I expect that health education

and orientation and reading of brochures specialised health magazines and health books (33UJNM).

...Health educators we are the one who are trying to tell people...No [specific person for the education]...We are the one...who are telling the patient about...medicine about the disease how to control what is good for their nutrition what is bad for their nutrition...health education is very important...So if the Saudi people are here like nurse, like health educator so people will listen to them more...I think we should do some activities and schools and colleges and like to avail about the diseases so youth and children they do they will listen to the things and definitely they will keep this things in mind and through the pamphlets you can distribute to the houses...they should have this some activities or education program like this for people in school and colleges for more awareness of diseases (26RHGF).

Health education sometimes doctors give it sometimes sisters (nurses) give patients...No [specific person]...I will give education and doctora [female doctor] give some health education...like diet control everything is told patient (30RINF).

We have health education program here in with the sisters [nurses] and male and female side, from doctors...tell the patients about some problems to the patients and we go out to the schools tell the children in the school about any problem smoking or anything about their health, chronic disease also we make education for the patient about the diabetes about how to care with it... No we don't have specific person for the health education we have sister [nurse] is specific for this...she is only for education...it is the first diabetes and hypertension...No we don't have specific person for the health education we have sister [nurse] is specific for this (32UJGM).

PHC service providers suggested that having an 'employee specialised in health education will help in educating the patients' (14UEMM).

Improvements to PHCS planning and delivery

Regardless of urban or rural location and regardless of job description there was a very limited awareness among the PHCC service providers of new developments related to the PHCCs. Any information that was acquired tended to be through informal communication with colleagues and friends and through the media.

The inspection by primary health care department should be more strict because if the inspector comes only once a year in July or January, the time of the visit will be known and this will negatively affect performance of the employees in terms of absence and organisation, and in terms of carelessness...so the only problem is lack of follow up from the primary health care department (1UAMM).

...lack of communication between me and the general hospital make an obstacle to the patient (2UAGM).

...basic information at the ministry of health come to us from TV and conferences (5UBMM).

...most centres till now have no electronic services, but I have heard that there is tendency towards this matter...I hear from colleagues that there are new centres which will open, but where and when I don't know...and I have heard that the ministry intends to open sectors supporting to primary health care centres (7UBNM).

Unfortunately, there is nothing tangible which we can read, or get from the ministry, but we hear from the colleagues (13UDNF).

The ministry most of all they are doing for the hospital...they don't care for the primary health care centres...we need for more care of primary health care...we need for improved primary health care...for everything from training for building for staff for machines (16UEGF).

...we have heard that there is a new centre ready and we will transfer to it... I have known through friends we have not received anything official so far (21RGMM).

I have heard about building of the new government health centre...I have heard this from my friends outside work and from my colleagues and the centre manager...I have no idea [challenges that the ministry of health encounter regarding the primary health care centres]...I hope that they look more and become interested in the health centres, and that they improve its systems and labs, and I hope that they improve the manpower and provide the centres with new and advanced systems [equipment or machines] because the systems [equipment or machines] we have are old and useless (24RGNF).

...for the communication we have a problem with the ministry and hospital...I listened [heard] this for a long time... that they want to concentrate on family doctors...yes, information from other people and through media (25RHMM).

No for us they don't tell us about anything. Right now...Yes you can say [lack of communication between us and the ministry] (29RIGM).

There are new centres and we have a new government building available, and it is almost ready...We have been in a course some time ago and they have shown us models of the health centres they have asked every centre manager about type of building he needs from classes of buildings (A/B/C) and each centre manager determines what he needs (31UJMM).

...our new centre from five years it is completely finish...I think electricity only [there is no electricity]...I hear from colleague (32UJGM).

...Communication is weak between centre and management...there are developments in the health centres, there are new government buildings, and we have heard about 2000 government building for primary health care throughout the Kingdom [name of PHC centre J] here has a new centre to which we will shift soon...We have not been informed of anything, but I have seen the building, and I have asked about it, It is available (33UJNM).

The narratives and description above highlight that discussion about service improvement included updating outdated computers, installing an electronic communication system and new medical equipment. Service providers felt that there was a need for more health education to prevent increases in the incidence of chronic diseases such as hypertension, diabetes and obesity. Overall there was poor awareness among PHC service providers of new developments related to PHC and any information was from informal communications. The next section turns its attention to the findings from interviews with the MOH policy makers.

5.3 Key findings from the service providers

Biographical details of the service providers

- Characteristics of the service providers: the practice managers and some nurses were Saudi nationals. The non-Saudi nurses were non-Muslims and said they spoke Arabic. All the GPs were non Saudis, Muslim and said they spoke Arabic.
- Discrimination: one non Saudi female GP from an urban PHCC explained that she experienced discrimination from Saudi nurses and one male GP said that there was a lack of respect for GPs exemplified by being transferred from one PHCC to another which in his view effected the patients and doctor's relationship and there's no continuity of care.

Barriers

- Health care provider roles and responsibilities: regardless of urban or rural location, managers and nurses providing dual roles because of staff shortages.
- Availability of pharmacist: (four out of five) urban PHCCs had a pharmacist but service providers explained that when they were unavailable, the nurses dispensed medicines. On the other hand, (four out of five) rural PHCCs did not have a pharmacist and medicines were being dispensed by a nurse on a regular basis.

- Defining rural and urban PHC: all the five rural PHCCs service providers said they were located in rural area while (one out of five) urban PHCCs (manager and the GP) felt they were located within an urban area.
- Auditing the service: regardless of urban or rural location service providers were auditing their service from the perspectives of the patients using satisfaction surveys but this was being carried out in an unplanned way either verbally, using questionnaire or suggestion box.
- Staff shortage and training skills: regardless of urban or rural location service providers explained the understaffed and the lack of training skills.
- Lack of a female staff: regardless of urban and rural location service providers explained lack of female GPs and nurses, all the five rural PHCCs each have only one female GP, on the other hand, four urban PHCCs each have one GP, one centre have three female GPs and one doesn't have any.
- Service availability: regardless of urban or rural location service providers explained there's lack in the important services required for the B3 classification (laboratory and dentistry).
- Other services availability: regardless of urban or rural location: service providers explained that there was a need for other services for example radiology, nutrition and physiotherapy.
- PHCC infrastructure: regardless of urban or rural location service providers explained the poor physical condition of the old rented PHCC buildings, old furniture and out of date medical equipment used, the

service providers discussed the importance of having purpose built PHCCs owned by the MOH.

- Problems with medical equipment: regardless of urban or rural location service providers explained the need for updating the old equipment, lack of maintenance and the delays for new equipment.
- Availability of medicine: regardless of urban or rural location service providers discussed shortages in medication; some said that medication was not a problem while others argue that availability of the type of medication varies.
- Electronic record system for referral from PHCC to hospitals: regardless of urban or rural location service providers explained the needs for an electronic patient record system, (four out of five) urban PHCCs used computer for referral by email but they are suffering from the bad net services while (three out of five) rural PHCCs used computer for referral.

Facilitators

- Distance and transportation to the PHCCs: (three out of five) rural PHCCs service providers said distance and transportation to the PHCCs is a problem for patients, (two out of five) urban PHCCs service providers said distance and transportation to the PHCCs is a problem for the patients specially those who lived in the farms and other village and for the workers. Both urban and rural PHCCs service providers explained distance between the PHCC and the referral hospital is a problem.

- PHC opening hours: all urban PHCCs service providers said they are working one shift from 7:30am – 4:30pm while (two out of five) rural PHCCs service providers said they are working two shift from 7:30am – 12:30pm and from 4:00pm – 8:00pm because their PHCCs far from the referral hospital.
- Waiting time: regardless of urban or rural location service providers said there's no waiting time for patients attending their appointments.
- Service provider-patient communication: language and religion were not seen as a problem between patients (GPs and nurses) from the manager perspective regardless urban and rural location while for some nurses and GPs regardless of urban or rural location communicating with patients in Arabic was a problem early on in their careers.
- Segregated spaces for women and men: regardless of urban or rural location both urban and rural PHCCs service providers explained there's segregated spaces for women and men.
- Service improvement: both urban and rural PHCCs service providers said we need to improve the existing equipment, updating outdated computers, need electronic communication system and need for new medical equipment.
- Providing health education: regardless of urban or rural location service providers said we need specialised health education for chronic disease patients because the percentage is high. GPs and nurses educate the patients but is not organised, every one conducts the education in his own way.

- Improvements to PHCS planning and delivery: regardless of rural or urban location service providers said there is limited awareness about the PHCCs new development and the information they get from colleagues, friends, media and conferences.

5.4 MOH policy makers

This section turns its attention to presenting the findings from the interviews with the MOH policy makers. Three, one to one interview were carried out with MOH officials. Two MOH officials were responsible for planning and delivering PHC in Riyadh province and one was responsible for overseeing PHC in the KSA. The findings from the interviews with the policy makers are presented below thematically using word for word interview data.

5.4.1 Present role in MOH

As mention above, two of the MOH policy makers were responsible for the planning and delivery of PHC in Riyadh province and one participant oversaw PHC in KSA. In the extracts from their interviews below policy makers explain the extent of their roles;

...we represent for all the Kingdom, we are in charge for about 400 primary health care units in the Riyadh Region, almost 100 inside Riyadh and 300 outside Riyadh...we are in charge of the technical supervision in the centres regarding the programs for example immunization programs, child health program, chronic diseases program which is TB, diabetes mellitus, hypertension, all these programs we are supervising that and follow that to be well implemented to the primary health care centres (1PMM).

...primary health care centre and health programs it was previously called primary health care centre or the issues that is causing the program because the service, the process, the quality of care and responsible for it in the primary health care centre (2PMM).

I am responsible for all the right now for departments and the ministry, first one is the department and the general department and primary health care centres...the second department is the chronic disease department, control chronic disease and the third department is the control and prohibition of smoking and the fourth department which is newly added to our department is the which is the school health...School health previously it was the responsibility of the Ministry of Education...But right now, it was shifted to the Ministry of Health so we will be responsible for profiling all the health services whether it is curative or preventive or promote to our children in the school (3PMM).

Table 5.6 Biographical details of the MOH policy maker's interview participants.

Codes	Gender	Nationality	Education/ Qualifications	Position	Length of service in MOH
1PMM	Male	Saudi	Family medicine consultant	MOH policy maker	_____
2PMM	Male	Saudi	Family medicine consultant	MOH policy maker	6 years
3PMM	Male	Saudi	Family and community medicine consultant	MOH policy maker	20 years

The narratives and description above highlight that two of the MOH policy makers were responsible for the planning and delivery of PHC in Riyadh province and one participant oversaw PHC in KSA.

5.4.2 Health care system planning and delivery in KSA

MOH policy makers explained the organisation and function of PHC in the KSA and the management and accountability process and during discussions referred to the ‘Strategic plan of PHC in Saudi Arabia 2010-2020’ which is regarded and the benchmark for health care system planning a delivery in the KSA.

Decision on locating PHCCs and defining urban and rural location

With reference to how decisions are made on where to locate the PHCCs, one MOH policy maker explained that the PHCCs are located based on population density whilst the other two explained that they were now located based on criteria (number of the population, the distance from the nearest PHCC, the distance to the nearest hospital, the type of road, the health problem that is common in the area and the availability of supportive services) and scoring generated by a computer programme.

However as the extracts from the interviews below highlight that MOH policy makers were rather vague about the definition of urban and rural and there was no consensus on exact numbers between the MOH policy makers.

This is the Planning department, we have on standard health centre, every number of population there is a centre assigned for them, we have almost 10 or more category of our centre every centre is assigned a number of population starting from 1,000 to 25,000 (1PMM).

...score is giving the priority for the location service, we have the management for the last 5 years to have new centres not existing 750 on top of the existing now and we maybe in the process to work 450 and 300 will be 355 will be soonest this year and the next year and also we requested for the next year 100 so in total in the 5 to 6 years we have introduced to the

system about 900 centres, it was probably 1900 so we introduced maybe more than 40% was existing previously...To have more accessibility of the service maybe next year... it was the definition by Ministry it was more than 50,000 population it is urban, less than 50 thousand population is rural...and they are classified this 50,000 - 200,000 they classified but I can't remember actually (2PMM).

...for the last 4 years we started computerised programs for prioritisation of the request for primary health care centre service where we put different criteria and scoring system according to the number of the population that will be served, the distance from the nearest primary health care centre, the distance to the nearest hospital, the type of the road, the health problem that is common in that area, availability of the supportive services...For the ministry actually, any area which is the population which is small far more than 80 kilometres from the big city or hospital we consider it is a rural, I can say it sometimes not even rural some are remote areas you will find a village more than 500 kilometre away from the nearest hospital, so we have rural which is 80 kilometre away from the city and we have remote rural which is more than 500 kilometre from the nearest health service...Wallah [I swear to God]I don't have a clear definition...usually any population over 500,000 as far as I know, anything more than 500,000 is a city but I am not sure because this is part of the Ministry of Planning agenda (3PMM).

Organisation and function of PHC in KSA

1PMM explained that the health care in KSA is divided into almost four categories. He continued to explain that;

...our difficulty now is the number of the health care and the hospital in the region is not that optimum one, now there is many hospitals are opening, many health centres and hospitals in the future will be opening to cover all areas in the region and city'(1PMM).

Another policy maker pointed out that organisation of primary care was outlined on the strategic plan which is based on collaboration with the GCC countries.

...meetings were held with the GCC three years ago and we develop plan from to start for 2010 to 2020 (2PMM).

As 3PMM explained;

...primary health care centres constitute the cores on the whole system, It is the gate with the health any patient who want to get the health service care should first come to the primary health care centre where we have more than 2400 primary health care centres distributed all the Kingdom and each health care centre have the catchment area of population... second level is hospitals, general hospitals and we have also some specialised hospital which I consider as second level also...third level which is tertiary hospital and fourth level is the medical cities (3PMM).

Management accountability and standards

Management and accountability of the PHCCs was embedded into the strategic plan as explained by 2PMM above who also continued to point out that regions and districts of the KSA are involved in developing and implementing the strategic plan. The MOH monitors that effectiveness of the strategic plan on an annual basis. He continued to point out that the strategic plan is developed in consultation with the regions and districts in the KSA.

‘...they have share with this strategic plan that have been provided in Saudi Arabia and they are conducting also they have done also the plans, decisions, and we are monitoring this plan all over every year’ (1PMM).

Regarding the primary health care centres, the management...two departments, there is technical departments, our responsibility and there is the administrative departments, there are many departments in the directorate, they follow the centres regarding the manpower, building, maintenance, medical maintenance...our department technical to implement all programs that comes from the Ministry of Health to be well implemented in the health care, so it is two levels or two way running parallel together to reach our goals in Riyadh (1PMM).

...all the budget is the distributed centrally from the Ministry of Health...we have 20 health regions each region is responsible for all the levels, the primary health care centre and hospitals, or they have medical city, so they will responsible arranging the

management within the region but the funds is centrally located and distributed to these regions and then it is according to the needs of each institute...we have different funds for the working population, for the buildings and hiring (3PMM).

The MOH policy makers explained that ‘we are following the CBAHI standards in our centres and it has started now for the last two years to implement this standard, other strategy and the programs with WHO and modified in the Ministry of Health, we are following this program and implement in that health care’ (1PMM). 2PMM explained that the aim was to ensure that all PHC are accredited by the CBAHI or JCIA over the next ten years. In addition to this 3PMM explained that;

Well, actually in primary health care centre, we have programs which is called Supportive Supervisory Program where we go a team from the Ministry centrally and there are team also in the region, they go to each health care to measure the performance of that centre with the medical point of view or administrative point of view and they have different indicators in each service actually (3PMM).

The narratives and description above highlight that according MOH Policy makers, the PHCCs are located based on population density but definitions of what constitutes urban or rural areas was vague. There was little discussion of the services that should be included in the B3 definition of the PHCCs. The MOH policy makers identified the need for more PHCCs and discussed these developments pointing out that these were based on the strategy plan and the PHC standards highlighted in the CBAHI and JCIA.

5.4.3 Current planning priorities for PHC in KSA

As with the PHC service providers, the MOH policy makers explained that the current priority for PHC in the KSA was tackling the increase in chronic diseases.

...nowadays all the talking about chronic health diseases which is diabetes mellitus and hypertension, which presents a difficulty or problem in our society because the percentage nowadays, they are talking of 24% for diabetes and 19% for hypertension in our society, this percentage put a problem facing in our centres to control, treat and prevent the complication of these diseases, nowadays we are our main goal is to control these diseases in our society (1PMM).

A rapid increase in chronic diseases was attributed to modernisation and lifestyle.

As (2PMM) explained;

obesity, diabetes, hypertension, cancer all this is emerging now, infectious disease is like spreading now...first you cannot manage with GP in this centre...so it's an issue it will not be resolved very easily unless we have standard of care as the main issue for quality and accreditation then we have the right manpower, the qualified manpower (2PMM).

3PMM discusses the diabetes epidemic in the KSA with a particular emphasis on the introducing diabetes clinics for better management of the condition.

It is chronic disease in general diabetes in particular, the prevalence of diabetes in the Kingdom is more than 20% and the complications of diabetes, renal failure is increasing, unfortunately, management of and for diabetes is not to the optimum that we expect we are trying to have the screening clinics in each primary health care centres screening for diabetes and for all other problems (3PMM).

Before 20 years all the problems facing primary health care and we most of the cases seen in primary health care centre were infectious diseases...cannot see the value is eradicated some of the case other than infectious diseases minimal only and scatter the areas and the Kingdom but chronic disease is becoming

increasingly the main concern for the whole Ministry of Health not only primary health care (3PMM).

Current priorities to address this centered on improving buildings, increasing manpower and training for existing and new staff. With reference to buildings the MOH policy makers explained that the government is building purpose built PHC because the existing buildings are rented and inadequate for the changing requirements from infectious to chronic diseases.

The changing PHC priorities from infectious diseases to chronic diseases also means that there is a change in the type of manpower required and one MOH policy maker explained;

...Regarding manpower, the Ministry started to recruit the family physician because our services is GP level, they started now to recruit specialist and consultant family medicine because we really need these speciality in our centres because of the chronic diseases we are facing in our society, second strategy is the training, training is very important and now the Ministry set aside a special budget for the training and this is essential in our future (1PMM).

This point was reiterated by another MOH policy maker;

For me, I am working on that with the Ministry renew the primary health care system so it will be covered all facing the chronic disease and problem and the main difficulty is that we need to have family physician in the primary health care centre but unfortunately, I mention to you earlier that we have more than over reach around 3000 primary health care centres...to cover this 3000 primary health care centre with family physician we need more than 10,000 family physicians, right now we don't have probably we have 300 to 400 family physician so the gap is huge and unfortunately there are, this specialty is rare

even abroad...we tried to recruit family physician from Arabic countries (3PMM).

2PMM explained that PHC had been successful in reducing infectious diseases in the KSA and that it was vital to ensure standards in the delivery of PHC and this was particularly important with doctors coming from outside of the KSA.

...priority in the next phase is the process, we have to improve process, pathways for the patient to have develop the work and because we have doctors all over Pakistan, Egypt and Sudan, different regions so they have different background of schools, medical schools so we have to set standard of care especially in the delivery of service because it was not before but regarding the issue, we have a success actually with the primary health care regarding immunization, child health care, antenatal care, It was also the health in this the virtue, maternal mortality it was decrease, infant mortality all these (2PMM).

The MOH policy makers also called for more specialist manpower. Although GPs were available there was discussion of the need for consultants or specialists in family medicine. It was felt that a more specialist manpower would help to reduce the pressure on secondary care;

It will go to Canada, UK, USA, Australia, all this candidates have consultants in the primary health care centre, I mean primary health care physicians we have only 400 the need is 8000...Yes, one of the issues also is the management also leadership (2PMM).

...we are trying to increase the ability of the physician working in the primary health care to manage chronic disease by training, by giving them specific training programs for chronic diseases that's the only way that we can do but this is the main challenge that we are facing is the staff...the Kingdom is relatively large country and there are small communities distributed here and there in the Kingdom and to provide service to each community is sometimes it is difficult but we are trying our best we as I told you we reach around 3000 now primary health care centres so almost any community which has more than 500 population and

with the distance from the nearest primary health care centre more than 50 kilometers we provide the health centre otherwise...a new program for mobile clinics also that we will try to cover small community all over the Kingdom (3PMM).

We develop training programs for this kind of medical leadership and we try to improve it but it is an issue but we have strategic plan, we monitor all the strategic plan, we are glad because we are reviewed most of the work of the primary health care centres it will take time developing, planning, executing and you see it, we have 2000 more than 2000s centres, so explaining all this issues will take time (2PMM).

The narratives and description above highlight that the aim is to tackle increasing rates of chronic diseases. There are three main ways in which this is being done, by focusing on and improving PHCC buildings, increasing manpower and introducing training for existing and new staff.

5.4.4 Patients access and utilisation of PHCCs

Overall the MOH policy makers did not feel that there were any barriers for patients accessing PHCCs. One of the MOH policy makers stated that he did not feel that there were any barriers for patients accessing PHCCs and that the high service utilisation was an example of this.

I don't think that there are any barriers...The utilisation of the primary health care centre is very high each year, we have more than 55 million visitors and to the primary health care centre to seek service from this centres and this is constitute more than 70% of the services of the Ministry of Health in general...I believe that it affected in positive way, the knowledge of the patient that's why we started a clinic for screening because when the whole population knowledge about the diseases and different problems increase that's why they start seeking preventive services more than before (3PMM).

He then went on to argue that on occasions patient satisfaction may act as a barrier to accessing services.

...but the only thing is the satisfaction of the patient themselves, some say they want to be seen directly by a consultants they don't want to be seen by a physician or even by a specialist and that's why the main challenge for us is having family physician who are specialist or consultants, this will increase the satisfaction of the population, I believe there is barrier right now (3PMM).

One MOH policy maker did mention that there was a shortage of female staff in remote rural areas which could be a barrier to women accessing the PHCC.

Actually in the cities no...But in the remote area yes [shortage of female manpower] (2PMM).

The fact that PHC in the KSA is free was seen as a facilitator to accessing services but there was an acknowledgement that there was increasing pressure on services. The participants explained that the MOH response to this was to plan for opening more PHCCs.

...our service is free, but for example the number of the health care centre in Riyadh is not enough to provide our services, now there is almost 60 health care [centres] extra that will be opened guaranteed to cover all the area in Riyadh (1PMM).

Provision of segregated spaces for women and men in the PHCCs and availability of male and female staff was seen as a facilitator for patients accessing PHCCs.

...and even in the centre we have actually separation between female or male and the future centre will open they have like as you see, some private sectors we have small space for the rest for them, to have but the centre the new there is... (2PMM).

The narratives and description above highlight that the MOH policy makers mentioned low levels of patient satisfaction and lack of female staff in remote rural PHCCs as a barrier to accessing PHCCs whilst free PHC in KSA was seen as a facilitator to accessing the PHC.

5.4.5 Service improvement

Discussion with MOH policy makers highlighted the need for purpose built PHCCs and the need for family physicians.

I agree with the strategy of our Ministry of Health regarding the building, number of governmental building regarding manpower of specialist, regarding the training programs...It's ok [financial resources]...our staff is mixed between male and female, they are providing the services for male and female with no problem at all (1PMM).

To improve the service of the primary care, from that, point of view...for the processes of quality and requisition process that will be carried out and the length and the scope of this services that will be expanded...Process and to improve policies, process of care and the quality of care...we have change in culture now and it will be opened fastly...(2PMM).

...right now the MOH is moving, before 7 or 8 years almost 80% of the primary health care centres building were rented buildings now we have more than 1400 buildings which is governmental buildings, we finished almost around 700 of these and we moved from rented building to these building which is equip with new equipment purposely built that the patient movement within that centre is according the system of the primary health care centre...another new dimension that we started to improve the services of primary health care, InshahAllah [if God help] next year we will start something like a polyclinic with different specialties like medicine, pediatric, obstetric and gyne, ophthalmology which will serve primary health care all the patient seen in primary health care centres and need to be seen by specialist from this specialties they will be referred to this polyclinic which will be located within the area of the primary health care centres (3PMM).

...we don't have qualified stable person in the health centres, one of the key issues in the primary health care centre is continuity of service, If you are the person, and who you are going, the family, the individual, the primary health care centres because of illnesses, it choose you between 5 to 7 seats in a year common colds, upper respiratory tract infections, vaccinations, it is collectively about to 5 to 7 this is international figure, so, when I go 5 to 7 times to centre here and see a GP, GP that is trained maybe not trained very well to manage my diabetes, my hypertension, what to trust this centre it will go down, so unless we manage this and we have very clear plan (2PMM).

No, not really, the only thing is that primary health care centre is really the corners on they are of all system , the Kingdom and the Ministry of Health is in first thing a lot to improve and upgrade the system and satisfy the needs of the population and reach our goals and hopefully, there is a lot of movements in the primary health care movements in the last 2 to 3 years, I believe that within even a right now with anyone requested primary health care centre will see some changes and eventually primary health care centre, I believe that it will cover more than 70 to 80% cover the needs of the population for the health point of view (3PMM).

The narratives and description above highlight that plans for improving PHCS in Riyadh and in the KSA was focusing on building new purpose build PHCCs, ensuring PHCCs have up to date and functioning equipment and more specialist staff.

5.5 Key findings

- Present role in the MOH: two of the MOH policy makers were responsible for the planning and delivery of PHC in Riyadh province and one responsible for PHC in KSA.
- Health care planning and delivery: There was no consensus on the criteria for locating the PHCCs. One MOH policy maker said they were located

based on population density and the other two mentioned definitions of what constitutes urban or rural areas was vague. There was little discussion of the services that should be included in the B3 definition of the PHCC. The MOH policy makers identified the need for more PHCCs and discussed these developments pointing out that these were based on the strategy plan and the PHC standards highlighted in the CBAHI and JCIA.

- Current planning priorities for PHC in KSA: current planning priorities centre on tackling the increasing rates of chronic diseases. There are three main ways in which this is being done, by focusing on and improving PHCC buildings, increasing manpower and introducing training for existing and new staff.
- Patient's access and utilisation of PHCCs:
 - barriers: MOH policy makers mentioned low levels of patient satisfaction and lack of female staff in remote rural PHCCs as a barrier to accessing PHCCs.
 - facilitators: free PHC in KSA was seen as a facilitator to accessing the PHC.
- Service improvement: plans for improving PHCS in Riyadh and in the KSA was focusing on building new purpose built PHCCs, ensuring PHCCs have up to date and functioning equipment and having more specialist staff.

5.6 Summary

This chapter has presented the qualitative findings from the one to one interviews with thirty three PHCC service providers (practice managers, GPs and nurses) and three MOH policy makers in the selected urban and rural PHC centres in Riyadh. Overall, there was a general consensus in the views of PHCC service providers in rural and urban areas. Although the PHCC selected for this research had a MOH B3 categorisation, services at the grass roots level did not comply with this classification. The definitions of rural and urban PHCC were based on the local environment and facilities such as the standard of road and facilities rather than population density, economic class or the level of education of the population. The MOH policy makers also highlighted some confusion over the criteria for this classification. Managers and nurses were carrying out more than one role at the time and on the whole, there was no systematic evaluation of patient satisfaction and it was unclear how results were being fed back into practice.

Rural and urban PHCC service providers saw the lack of female GPs, limited availability of medicines, poor PHCC facilities, equipment and services, distance and transport, to allocated referral hospitals were seen as a barrier to potential patients accessing the service. The MOH policy makers did not feel that there were any barriers to accessing the PHCCs. The facilitators were the availability of Arabic speaking PHCC staff and segregated spaces for a woman which is a requirement in KSA.

The findings highlight that the PHCCs are in a phase of transition from being housed in domestic buildings (houses) to new purpose built PHCCs with improved facilities, equipment and services. PHCC staff called for the updating of outdated computers, installing an electronic communication systems and new medical equipment.

PHCC service providers also felt that there was a need for more health education to prevent increases in the incidence of chronic diseases such as hypertension, diabetes and obesity. This point was reiterated by the MOH policy makers who see this as a current planning priority for PHC in KSA. This was being actioned by improving PHCC buildings, increasing manpower and introducing training for existing and new staff. The next chapter presents the results of the quantitative data from questionnaires completed by the patients attending the selected PHCCs.

Chapter 6: Understanding patient views on the barriers and facilitators to accessing and utilising PHCS

6.1 Introduction

This chapter presents the results from the quantitative arm of the study. A total of 935 patient questionnaires were completed. The description of the results below follow the themes/headings and numbering in the questionnaire (appendix 10) apart from the section on ‘About you’ (socio-demographic data Section P on the questionnaire -from P1-P4) which is presented first below as way of context about the participants. The descriptions of the results are followed by data tables. The description for the correlations between the dependant and independent variables are presented in this chapter but the data tables can be found in appendix 17.

6.2 The PHCCS questionnaire^{34 35}

As discussed in Chapter 4 (section 4.5.3) the PHC questionnaire used was adapted from the National Health Service (NHS) National Survey Programme, PCT Question Bank 2008 v2 27th November 2007) (appendix 10). The questionnaire was translated from English into Arabic by two independent Arabic native speakers and focussed on collecting information on barriers and facilitators to accessing and utilising PHCCs in rural and urban areas of Riyadh province. The focus of the questionnaire was to understand the role of three Andersen's (2008) predisposing, enabling and need factors which breakdown factors that influence patient's access and utilise PHC.

³⁴The independent variables for patient survey are sex (P1), age (P2) income (P4) and rural and urban (rural or urban code). Education (P3) was included as an independent variable however at the analysis stage it was discovered that this was a problematic question for a number of reasons: on reflection the question was poorly worded. The question read-How old were you when you left full-time education? There were four options for respondents to tick provided 16 years or less, 17-18 years, 19 years or over, still in full-time education. These categories were on reflection very ambiguous and therefore open to interpretation which was difficult to enter into the data based and not have generated meaningful responses, for example the option of 16 or less does not allow the respondents to indicate if the education is high school or secondary. In retrospect it would have been better to ask 'what is your highest level of education?' with the following options primary, secondary, high school, undergraduate university and postgraduate university. It was therefore seen as pragmatic to exclude this independent variable from the analysis. This was not seen as a problem because there were still four independent variables available. In addition education and income are proxy variables so for example if someone has a good education they are likely to be earning more money. It is important however to be cautious as in the Saudi context for many have a salaried income (often supplemented inherited allowances).

³⁵ The age groups were collapsed because few age group categories would be more statistically significant.

Upon finishing the survey, questionnaires were checked for validity, by using the appropriate response techniques; incomplete surveys were discarded so that the credibility of the results was enhanced. Non-responses were also collected and the causes of participants refusing to complete the questionnaires are discussed in Chapter 4 (section 4.5.3), the limitations of the study. The variables were coded and entered into Microsoft Access data base, data then were taken into SPSS 21 software for analysis. SPSS 21 software was used for the descriptive analysis of the results, frequency tables were constructed and means, standard deviations, percentages and frequencies were derived from the collected data. The statistical significance was indicated by probability (*P*-value) for association between the variables concerned of at a significant level of <0.0001 , (extremely significant) in this study. The sections below presents the results of the questionnaire survey for each question.

As discussed there were two phases of data collection and a total of 935 questionnaires were collected in total. Phase one generated 438 questionnaires and phase two of the data collection returned 538 questionnaires. In Chapter 4 (section 4.5.3) Table 4.3 below shows the number of questionnaires handed out at each, returned, excluded and the response rate for each PHCC.

6.3 Descriptive results

6.3.1 About you (Section P)

This section includes questions P1 to P5. P1 to P4 on the questionnaire focussed on the socio-demographic data, and P5 asked the respondents about the overall rate about their health in the past four weeks.

The table below shows that out of 935 patient respondents 56.9% were females, and 47.1% were in the age group of between 31 to 50 years. 49.8% had a monthly income in the range of 3000 to 8000 SR, and 52.9% were from urban region for visiting PHCC.

Table 6.1 Socio demographic characteristics of respondents

Variables	No. (%)
<u>P1. Gender</u>	
Male	403(43.1)
Female	532(56.9)
<u>P2. Age groups(in years)</u>	
<= 30	374(40)
31-50	440(47.1)
> 50	121(12.9)
<u>P4. Monthly Income (SAR)</u>	
<=3000	420(44.9)
3000 to 8000	466(49.8)
8000 to 15000	49(5.2)
<u>Region</u>	
Rural	440(47.1)
Urban	495(52.9)

P5 Question asked respondents about how they rate their health in the past 4 weeks, the table below shows that that out of 935 patient respondents 98.6% had responded their health was excellent, very good and good and 53.7% was the highest proportion of patient respondents who responded their health was very good. Only 13 had expressed as fair. And none in the categories of poor and very poor

Table 6.2 Socio-demographic characteristics of respondents

Variables	No. (%)
<u>P5. Overall, how would you rate your health during the past 4 weeks?</u>	
Excellent	123(13.2)
Very good	502(53.7)
Good	297(31.8)
Fair	13(1.4)

6.3.2. Making an appointment (Section A)

Questions A1-A5 asked respondents about making an appointment at the PHCCs none of the respondents were taking appointment to visit the PHCC.

Table 6.3 Distribution of responses towards making an appointment

Section A Making an appointment	No. (%)
<u>A1. Have you made an appointment with a doctor from your primary health care centre in the last 12 months?</u> Yes No	1(0.1) 934(99.9)
<u>A2. The last time you saw a doctor from your primary health care centre, how long did you wait for an appointment?</u> I was seen without an appointment I was seen on the same working day I waited 1 or 2 working days I waited more than 2 working days It was pre-planned appointment or visit Can't remember	1(0.1)
<u>A3. What was the main reason you waited?</u> I wanted to see my own choice of doctor I could not get an earlier appointment with any doctor at my health centre It was not convenient for me to have an appointment at any earlier time Another reason	1(0.1)
<u>A4. How do you feel about the length of time you waited for an appointment with a doctor?</u> I was seen as soon as I thought was necessary I should have been seen a bit sooner I should have been seen a lot sooner	1(0.1)
<u>A5. If you want to make doctor's appointment 3 or more working days in advance does your primary health care centre allow you to do that?</u> Yes No Don't know/not sure	1(0.1)

6.3.3 Visiting the PHCC (Section B)

Questions B1 and B2 asked respondents about visiting the PHCC. Table 6.4 shows that 20% had sited distance from home to PHCC as a problem.

Table 6.4 Distribution of responses towards visiting the PHCC

Section B Visiting the PHCC	No. (%)
<u>B1. Is the distance from your residence an issue in visiting your primary health care centre?</u>	
Yes	187(20)
No	748(80)
<u>B2. How long after your appointment time did you have to wait to be seen?</u>	
I did not have an appointment	
Seen on time or early	933(99.8)
Waited up to 15 minutes	2(0.2)
Waited 16-30 minutes	
Waited 31 minutes or longer	
Can't remember	

6.3.4 Seeing a doctor (Section C)

Questions C1 to C5 asked respondents to think about the last time they saw a doctor at the PHCC. Table 6.5 below shows that 87.6% of respondents said that the doctor listened carefully to what they had to say, 85.7% were agreed that they were given enough time to discuss their health or medical problem with the doctor, 83% were able to understand the answers from the doctor towards their questions, 76.6% of them agreed positively that they got understood, the explanation from the doctor towards the reasons for any treatment or action, and

99.4% of them agreed that, they have been treated by the doctor with respect and dignity.

Table 6.5 Distribution of responses towards seeing a doctor at their PHCC

Section C Seeing a doctor	No. (%)
<u>C1. Did the doctor listen carefully to what you had to say?</u>	
Yes, definitely	819(87.6)
Yes, to some extent	116(12.4)
No	--
<u>C2. Were you given enough time to discuss your health or medical problem with the doctor?</u>	
Yes, definitely	801(85.7)
Yes, to some extent	123(13.2)
No	6(0.6)
I did not need to discuss anything	5(0.5)
<u>C3. If you had questions to ask the doctor, did you get answers that you could understand?</u>	
Yes, definitely	776(83)
Yes, to some extent	125(13.4)
No	8(0.9)
I did not need to ask any questions	22(2.4)
I did not have an opportunity to ask questions	4(0.4)
<u>C4. Did the doctor explain the reasons for any treatment or action in a way that you could understand?</u>	
Yes, definitely	716(76.6)
Yes, to some extent	99(10.6)
No	9(1.0)
I did not need an explanation	47(5.0)
No treatment or action was needed	64(6.8)
<u>C5. Did the doctor treat you with respect and dignity?</u>	
Yes, all the time	929(99.4)
Yes, some of the time	6(0.6)
No	--

6.3.5 Medicines (section D)

Questions D1 to D6 asked respondents about medicines (tablets, ointment, oral contraceptives) at the PHCCs, table 6.6 showed that 99.4% of the respondents had been taking prescribed medicines for 12 months or longer, 96% of them did not pay any amount for any of prescribed medicines, 11.1% of them had asked a pharmacist for some advice on medicines, and 65.4% of the respondents had felt that the pharmacist advice was helpful. About only 9.3% of the respondents had asked a traditional healer for any advice on medicines and 54% of these subjects felt that the traditional healer's advice was helpful.

Table 6.6 Distribution of responses towards medicines at their PHCC

Section D Medicines	No. (%)
<u>D1. Have you been taking any prescribed medicines for 12 month or longer?</u>	
Yes	929(99.4)
No	6(0.6)
<u>D2. Did you have to pay for any prescribed medicines for last 12 months?</u>	
Yes	37(4)
No	898(96)
<u>D3. In the last 12 months, have you asked a pharmacist for any advice on medicines?</u>	
Yes	104(11.1)
No	831(88.9)
<u>D4. Was the pharmacist's advice helpful?</u>	
Yes, definitely	68(65.4)
Yes, to some extent	35(33.6)
No	1(1.0)
Not sure	
<u>D5. In the last 12 months, have you asked a traditional healer for any advice on medicines?</u>	
Yes	87(9.3)
No	848(90.7)
<u>D6. Was the traditional healer's advice helpful?</u>	
Yes, definitely	47(54)
Yes, to some extent	26(29.9)
No	10(11.5)
Not sure	4(4.6)

6.3.6 Tests (section E)

Table 6.7 below presents the results for questions E1 to E3 which referred to patients getting tests (blood tests, swabs, smear tests) at their PHCC 26.7% of the respondents had responded as “Yes”, and 76.4% of them only got the tests results on time or early, and 94.4% of them mentioned that someone explain the results of the tests in the way they understood.

Table 6.7 Distribution of responses towards tests and referrals at their PHCC

Section E Tests	No. (%)
<u>E1. In the last 12 months, have you had any tests (e.g. blood tests, swabs, smear tests) carried out by anyone from your primary health care centre?</u>	
Yes	250(26.7)
No	157(16.8)
Can't remember	13(1.4)
Not available	515(55.1)
<u>E2. Did you get your tests results on time?</u>	
Yes, I got them on time or early	191(76.4)
No, I got the results later than expected	55(22)
I am still waiting for the results	4(1.6)
I did not get the results at all	--
<u>E3. Did someone explain the results of the tests in a way you could understand?</u>	
Yes, definitely	236(94.4)
Yes, to some extent	11(4.4)
No	--
I am still waiting for the results	3(1.2)
Not sure/can't remember	--

6.3.7 Referrals (section F)

Question F1 asked respondents about if they had been referred to a specialist (e.g. a hospital consultant). 57.2% of the respondents had been referred to a specialist (e.g. a hospital consultant).

Table 6.8 Distribution of responses towards referrals at their PHCC

Section F Referrals	No. (%)
<u>F1. In the last 12 months, has anyone at your primary health care centre referred you to a specialist (e.g. hospital consultant?)</u>	
Yes	535(57.2)
No	400(42.8)

6.3.8 Seeing another professional from this PHCC (section G)

Questions G1 to G8 asked respondents about seeing another professional at the PHCC, table 6.9 showed that all respondents had responded as “NO”, they didn’t see another professional at the PHCC.

Table 6.9 Distribution of responses towards seeing another professional from their PHCC

Section G Seeing another professional	No. (%)
<u>G1. Have you seen anyone else from your primary health care centre other than a doctor in the last 12 months?</u> Yes No	-- 935(100)
<u>G2. The last time you saw someone other than a doctor from your primary health care centre, who did you see?</u> A nurse practitioner A midwife A dentist A health educator Someone else I was not sure who I saw	-- --
<u>G3. The last time you saw this person, how long did you wait for an appointment?</u> I was seen without an appointment I was seen on the same working day I waited 1 working day I waited 2 working days It waited more than 2 working days It was a pre-planned appointment or visit Can't remember	-- --
<u>G4. What was the main reason you waited?</u> I wanted to see my own choice of professional I could not get an earlier appointment with any other professional at my health centre It was not convenient for me to have an appointment at any earlier time Another reason	-- --
<u>G5. How do you feel about the length of time you waited for an appointment with this person?</u> I was seen as soon as I thought was necessary I should have been seen a bit sooner I should have been seen a lot sooner	--

<u>G6. Did that person explain the reasons for any treatment or action in a way that you could understand?</u> Yes, completely Yes, to some extent No I did not need an explanation No treatment or action was needed	--
<u>G7. Did that person treat you with respect and dignity?</u> Yes, all of the time Yes, some of the time No	--
<u>G8. Did you have confidence and trust in that person?</u> Yes, definitely Yes, to some extent No	--

6.3.9 Overall about your health centre (section J)

In response to the opinion about the overall health centre, 87.3% of the respondents felt satisfied and it was the main reason to go their PHCC, 62.5% had felt that their PHCC was very clean, 95.1% had responded as “very easy” to find it move around inside the PHCC, only 6.8% of the respondents have been felt to put off going to their PHCC due to the inconvenience of opening time. For the suggestion of additional times to open the PHCC, 47.5% of them suggested as no extra hours and 31% of them had suggested the evening timings (after 6 pm). Only 31% of them suggested one day per week, if the centre to open either earlier in morning or later in the evening and 38.8% of them accepted to close for some of its normal hours (to some extend), if the PHC were to be open in the extra

hours. 99.3% of the respondents had responded as “NO” they don’t need any help to understand Arabic.

Table 6.10 Distribution of responses towards overall about their PHCC

Section J Overall about their health centres	No. (%)
<u>J1. Was the main reason you went to your primary health care centre dealt with to your satisfaction?</u>	
Yes, completely	816(87.3)
Yes, to some extent	116(12.4)
No	3(0.3)
<u>J2. In your opinion, how clean is the primary health care centre?</u>	
Very clean	584(62.5)
Fairly clean	310(33.2)
Not very clean	27(2.9)
Not at all clean	12(1.3)
Can’t say	2(0.2)
<u>J3. How easy do you find it to move around inside the primary health care centre?</u>	
Very easy	889(95.1)
Fairly easy	44(4.7)
Not all easy	1(0.1)
Can’t say	1(0.1)
<u>J4. In the last 12 months, have you ever been put off going to your primary health care centre because the opening times are in convenient for you?</u>	
Yes, often	64(6.8)
Yes, sometimes	254(27.2)
No	617(66)
<u>J5. If it were possible for your primary health care centre to open at additional times, which of these times would you most like it to be open?</u>	
No extra hours	444(47.5)
Early mornings (before 8 am)	21(2.2)
Evenings (after 6 pm)	290(31)
Saturdays	174(18.6)
Fridays	2(0.2)
NA	4(0.4)

<u>J6. If your primary health care centre were to be open either earlier in the morning or later in evening, how many days a week would you want this to happen?</u>	290(31)
One day per week	272(29.1)
Two or three days per week	87(9.3)
Four or five days per week	282(30.2)
Don't know	4(0.4)
NA	
<u>J7. If your primary health care centre were to be open extra hours but had to close for some of its normal hours to allow this, would this be acceptable to you?</u>	283(30.3)
Yes, completely	363(38.8)
Yes, to some extent	283(30.3)
No	6(0.6)
NA	2(0.2)
<u>J8. Do you need any help understanding Arabic?</u>	928(99.3)
Yes	5(0.5)
No	
NA	
<u>J9. The last time you saw someone from your primary health care centre who did not speak your language, was there someone who could interpret for you?</u>	935(100)
NA	

6.3.10 Dental care (section K)

For the dental care, only 47.3% of the respondents were visiting the dentist regularly (at least once every 2 years), and only 39.9% of the respondents were visiting a dentist at their PHCCs in the last 24 months. And only 29.1% of the respondents felt satisfied with their visit.

Table 6.11 Distribution of responses towards dental care at their PHCC

Section K Dental care	No. (%)
<u>K1. Do you visit a dentist regularly (that is at least once every 2 years)?</u>	
Yes- at a primarily health care centre	274(47.3)
Yes-privately	157(16.8)
No	57(6.1)
Don't know	5(0.5)
NA	442(47.3)
<u>K2. In the last 24 months, have you visited a dentist at a primary health care centre?</u>	
Yes	373(39.9)
No	105(11.2)
Not sure/Can't remember	15(1.6)
NA	442(47.3)
<u>K3. Overall, was the main reason for this visit dealt with satisfactorily?</u>	
Yes, completely	272(29.1)
Yes, to some extent	153(16.4)
No	68(7.3)
NA	442(47.3)

6.3.11 Health promotion (section L)

Questions L1 to L3 asked respondents about health promotion at PHCCs. 65.3% of the responded answered positively that their blood sugar was measured during last twelve months at their PHCCs, 48.9% of them got the advice from their PHCCs to lose their body weight, and 35.9% of them got advice from their PHCCs on eating a healthy diet.

Table 6.12 Distribution of responses towards health promotion at their PHCC

Section L Health Promotion	No. (%)
<u>L1. In the last 12 months have you had your blood sugar levels measured by anyone from your primary health care centre?</u>	
Yes	611(65.3)
No	317(33.9)
Not sure/can't remember	7(0.7)
<u>L2. In the last 12 months, have you been given advice from your primary health care centre on your weight?</u>	
Yes- I was told I should try to lose weight	457(48.9)
Yes- I was told I should try to stay the same weight	162(17.3)
Yes-I was told I should try to gain weight	52(5.6)
No, but I would have liked some advice	129(13.8)
No, but I did not want any advice	135(14.4)
<u>L3. In the last 12 months, have you been given advice or help from your primary health care centre on eating a healthy diet?</u>	
Yes, definitely	336(35.9)
Yes, to some extent	187(20)
No, but I would have liked help/advice	223(23.9)
No, but I did not want any help/advice	189(20.2)

6.3.12 Utilisation of the services (laboratory and dentistry)

The table below shows the patient responses towards the utilisation of the laboratory services. Out of 5 rural centres only 2 centres (“C” and “G”) are having the facility of laboratory, whereas out of 5 urban centres 3 centres (“A”, “B” and “J”) are having the facility of laboratory.

Table 6.13 Responses towards utilisation of lab in relation to rural and urban centres

Region		<u>In the last 12 months, have you had any tests (e.g. blood tests, swabs, smear tests) carried out by anyone from your primary health care centre?</u>				Total
		NA	Yes	No	Not sure/can't remember	
Urban	Centre"A"	109	0	0	0	109
		100.0%	.0%	.0%	.0%	100.0%
	Centre"B"	108	0	0	0	108
		100.0%	.0%	.0%	.0%	100.0%
	Centre"D"	0	56	22	3	81
		.0%	69.1%	27.2%	3.7%	100.0%
	Centre"E"	0	75	19	1	95
		0%	78.9%	20.0%	1.1%	100.0%
	Centre"J"	102	0	0	0	102
		100.0%	.0%	.0%	.0%	100.0%
	Total	319	131	41	4	495
		64.4%	26.5%	8.3%	.8%	100.0%
Rural	Centre"C"	97	0	0	0	97
		100.0%	.0%	.0%	.0%	100.0%
	Centre"G"	99	0	0	0	99
		100.0%	.0%	.0%	.0%	100.0%
	Centre"H"	0	43	36	1	80
		.0%	53.8%	45.0%	1.3%	100.0%
	Centre"I"	0	28	46	5	79
		.0%	35.4%	58.2%	6.3%	100.0%
	Centre"R"	0	48	34	3	85
		.0%	56.5%	40.0%	3.5%	100.0%
	Total	196	119	116	9	440
		44.5%	27.0%	26.4%	2.0%	100.0%

The table below shows the patient respondents responses towards the utilisation of the dentistry services. Out of 5 rural centres only 2 centres (“C” and “G”) are having the facility of dental care, whereas out of 5 urban centres 3 centres (“A”, “D” and “B”) are having the facility of dental care.

Table 6.14 Responses towards utilisation of dentistry in relation to rural and urban centres

Region		In the last 24 months, have you visited a dentist at a primary health care centre?				Total
		NA	Yes	No	Not sure/can't remember	
Urban	Centre"A"	109	0	0	0	109
		100.0%	.0%	.0%	.0%	100.0%
	Centre"B"	108	0	0	0	108
		100.0%	.0%	.0%	.0%	100.0%
	Centre"E"	0	92	3	0	95
		.0%	96.8%	3.2%	.0%	100.0%
	Centre"D"	29	37	11	4	81
		35.8%	45.7%	13.6%	4.9%	100.0%
	Centre"J"	0	65	31	6	102
		.0%	63.7%	30.4%	5.9%	100.0%
	Total	246	194	45	10	495
		49.7%	39.2%	9.1%	2.0%	100.0%
Rural	Centre"G"	99	0	0	0	99
		100.0%	.0%	.0%	.0%	100.0%
	Centre"H"	0	59	20	1	80
		.0%	73.8%	25.0%	1.3%	100.0%
	Centre"I"	0	56	20	3	79
		.0%	70.9%	25.3%	3.8%	100.0%
	Centre"R"	0	64	20	1	85
		.0%	75.3%	23.5%	1.2%	100.0%
	Total	196	179	60	5	440
		44.5%	40.7%	13.6%	1.1%	100.0%

6.4 Key findings from the descriptive data

- The highest proportion of patient respondents responded were females, in the age group of between 31 to 50 years, with monthly income range (3000 to 8000 SR), and were from urban region for visiting PHCCs.
- The highest proportion of patient respondents responded their health rate in the past 4 weeks was very good.
- None of the patient respondents were taking appointment to visit the PHCCs.
- Distance from home to the PHCC was not a problem for patients respondents
- The highest proportion of patient respondents responded positively about the last time they saw a doctor at the PHCC, respondents said that (doctor listened carefully to them, given enough time to discuss their health or medical problem, understand the answers towards their questions, understood the explanation towards the reasons for any treatment or action, treated with respect and dignity).
- The highest proportion of patient respondents reported that they are (taking prescribed medicines for 12 months or longer, did not pay for any prescribed medicines, pharmacist advice was helpful, traditional healer's advice was helpful), only small proportion of the patients respondents reported that they asked a pharmacist for some advice on medicines and asked a traditional healer for advice on medicines.

- The highest proportion of patient respondents reported that test is not available in their PHCCs, only small proportion had responded as “Yes” they did a test in their PHCCs, The large proportion of the patients respondents responded that they got the tests results on time or early and mentioned that the results of the tests explanation was understood.
- The highest proportion of patient respondents reported that they had been referred to a specialist in the hospital.
- None of the patient respondents reported that they see another professional at the PHCCs.
- The highest proportion of patient respondents reported that (satisfied with the main reason to go to their PHCC, felt that their PHCC was very clean, “very easy” to move around inside the PHCC, no extra hours to be open and they don’t need any help to understand Arabic). Only small proportion of the patients respondents reported that (put off going to their PHCC due to the inconvenience of opening time, one day per week to open either earlier in morning or later in the evening and accepted to close for some of its normal hours if the PHCC were to be open in the extra hours).
- The highest proportion of patient respondents reported that they were visiting the dentist regularly (at least once every 2 years), Only small proportion of the patients respondents responses that they were visited a dentist at their PHCCs in the last 24 months and felt satisfied with their visit.

- The highest proportion of patient respondents reported that their blood sugar was measured during last twelve months at their PHCCs, got advice from their PHCCs to lose their weight and eating a healthy diet.

6.5 Correlations between the dependent and independent variables

This section presents the results for the correlations (at a significance level of <0.0001) carried out between the independent variables (age, gender, income, and region) and the dependent variables (outcome variables). The description for the correlations is provided below and the tables/data are available in appendix 17 corresponding to the numbers and titles of the sections below. As discussed in foot note section 6.2 education level (question P3) was omitted from the analysis because the question was problematic it asked ‘how old were you when you left full-time education? Rather than what level of education respondents had achieved for example primary, secondary and/or higher education.

6.5.1 Correlation between the responses towards “visiting their PHCCs” and age, gender, monthly income and region

There is no statistically significant association between the responses towards two questions by respondents and their age groups, gender and income groups. That is the distribution of responses to the questions “Is the distance from your residence an issue in visiting your primary health care centre?” and “How long after your appointment time did you have to wait to be seen” were not statistically significantly different across the 3 independent variables (age, gender income). Whereas the region (rural and urban) is statistically significantly associated with

the responses for the question “Is the distance from your residence as in issue in visiting your primary health care centre?”, in which 65.8% of the respondents from rural regions had responded positively “yes” to this question, when compared to 34.2% of the respondents from urban area which indicates statistically significant difference ($P<0.0001$). Whereas no statistically significant difference in the responses to the question “how long after your appointment time did you have to wait to be seen?” between the subjects of rural and urban regions, see appendix 17 (table 1).

6.5.2 Correlation between the responses towards “seeing a doctor at their PHCC” and age, gender, monthly income and region

There is no statistically significant association between the responses towards five questions by the respondents and their age groups, gender, income groups and region. That is the distribution of responses to the questions “did the doctor listen carefully to what you had to say?”, “ Were you given enough time to discuss your health or medical problem with the doctor?”, “ If you had questions to ask the doctor, did you get answer that you could understand?”, “ Did the doctor explain the reasons for any treatment or action in way that you could understand?” and “ Did the doctor treat you with respect and dignity?” were not statistically significantly different across the 4 independent variables (age, gender income and region).

6.5.3 Correlation between the responses towards “medicines, tests and referrals at their PHCC” and age, gender, monthly income and region

In relation to the medicines at their PHCCs, the respondents have been asked the 6 questions “Have you been taking any prescribed medicines for 12 month or longer?”, “Did you have to pay for any prescribed medicines for last 12 months?”, “In the last 12 months, have you asked a pharmacist for any advice on medicines?”, “Was the pharmacist’s advice helpful?”, “In the last 12 months, have you asked a traditional healer for any advice on medicines?” and “was the traditional healer’s advice helpful?” 4 questions were measured on a dichotomous responses “Yes and No” and the remaining 2 questions were measure on 4 point scale “Yes definitely, Yes to some extent, No and Not sure”. The analysis of association between the responses and the three age groups indicates statistically significant differences in the responses 4 out of 6 questions among the three age groups of the respondents. ($p < 0.0001$, < 0.0001 , < 0.0001 , and < 0.0001). and the referral “In the last 12 months, has anyone at your primary health care centre referred you to a specialist?”, 49.2% of 31 to 50 years age group respondents have responded as “yes” when compared to 17% of > 50 years age group subjects and 33.8% of ≤ 30 years age group of subjects, which indicates statistically significant difference in the distribution of responses ($P < 0.0001$), see appendix 17 (table 2).

Towards the distribution of responses to the questions related to the tests “In the last 12 month, have you had any tests (e.g., blood tests, swabs, smear tests) carried out by anyone from your primary health care centre?” “Did you get your tests

results on time?” and “In the last 12 months, have you asked a traditional healer for any advice on medicines?” there’s no statistically significant difference across the 3 age groups. There is no statistically significant association between the responses of the respondents towards medicines, tests and referrals questions and gender (male and female).

Monthly income of the respondents is statistically significantly associated with the responses of one question related to medicines “Have you been taking any prescribed medicines for 12 months or longer?” in which higher proportion 56.8% of the respondents with monthly income “3000 to 8000” have responded as “Yes” when compared to (37.7%, 5.5%) of the respondents with monthly income of (≤ 3000 and 8000 to 15000), see appendix 17 (table 3). Other questions responses are not statistically significantly associated with the monthly income of the respondents.

Region (rural and urban) of the respondents is statistically significantly associated with the responses of the question of tests “In the last 12 months, have you had any tests carried out by anyone from your primary health care centre?”, in which 52.4% of the respondents from urban region had responded as “Yes” when compared with 47.6% of the respondents from rural region, whereas 26.1% as “No” from urban and 73.9% from rural region, which is statistically significant different ($p < 0.0001$). Other questions responses are not statistically significantly associated with the region of the respondents, see appendix 17 (table 4).

6.5.4 Correlation between the responses towards “overall about their PHCC” and age, gender, monthly income and region

The three age groups of the respondents (≤ 30 , 31 to 50 and > 50 years) and the responses to the questions of overall about their PHCC “In the last 12 months have you even been put off going to your primary health care centre because the opening times are inconvenient for you?” and “If your primary health care centre were to be open either earlier in the morning or later in evening, how many days a week would you want this to happen?”, are statistically significantly associated. For all the two questions, the respondents who were in age group (< 30 years and 31 to 50) years have responded in higher proportion when compared with the respondents of age (> 50) years, which shows statistically significant difference among the 3 age groups of the respondents in relation to the responses to the two questions (< 0.0001 and < 0.0001) appendix 17 (table 5).

Gender (male and female) of the respondents not statistically significantly associated with the responses of all the questions related to overall about their PHCCs. The three income groups of the respondents (≤ 3000 , 3000 to 8000 and 8000 to 15000) and the responses to the questions of overall about their PHCCs were not statistically significantly different.

The respondents from urban PHCCs have responded positively “very clean” in higher proportion 58% to the question of overall about their PHCCs “In your opinion, how clean is the primary health care centre?” when compared with proportion 42% of the respondents from rural areas, which indicates statistically

significance difference ($p < 0.0001$) Whereas, to the question “If it were possible for your primary health care centre to open at additional times, which of these times would you most like it to be open?”, higher proportion (52.7%) of the respondents from rural area has responded as “no extra hours” when compared to the (47.3%) of the respondents from urban area, which is statistically significant different ($p < 0.0001$), see appendix 17 (table 6).

6.5.5 Correlation between the responses towards “dental care and health promotion at their PHCCs” and age, gender, monthly income and region

The responses of the respondents towards the questions of dental care and health promotion at their PHCCs “do you visit a dentist regularly that is at least once every 2 years”, “ In the last 24 months have you visited a dentist at a primary health care centre ?”, “ In the last 12 months have you had your blood sugar levels measured by anyone from your primary health care centre?”, “ In the last 12 month, have you been given advice from your primary health care centre on you weight ? “ and In the last 12 months, have you been given advice or help from your primary health care centre on eating a healthy diet ?” are statistically significantly different across the three age groups (< 30 , 31 to 50 and > 50 years) of the respondents. That is the higher proportion of the respondents who were in age group of (< 30 and 31 to 50) years have responded as “Yes- at a primarily health care centre; Yes; Yes; Yes- I was told I should try to lose weight and Yes, definitely” when compared with the subjects of age group (> 50) years which is statistically significantly different ($p < 0.0001$; < 0.0001 ; < 0.0001 ; < 0.0001 and < 0.0001), see appendix 17 (table 7).

Female respondents have responded as “Yes, completely and Yes, definitely” in higher proportion (65.8% and 66.4%) when compare to male subjects (34.2% and 33.6%) to the questions “ overall, was the main reason for this visit dealt with satisfactorily“ and “In the last 12 months, have you been given advice or help from your primary health care centre on eating a healthy diet ?” which shows statistically significant difference between male and female respondents ($p < 0.0001$ and < 0.0001), see appendix 17 (table 8).

Similarly, the distribution of responses to the 3 questions of dental care and 2 questions of health promotion are statistically significantly different across the three income groups of the respondents, in which the respondents in the monthly income group of (3000 to 8000) have responded in higher proportion when compared to the subject who were in monthly income of (≤ 3000 and 8000 to 15000) ($p < 0.0001$; < 0.0001 ; < 0.0001 ; < 0.0001 and < 0.0001). Whereas, no statistically significant difference was observed in the responses to the question “In the last 12 months, have you been given advice or help from your primary health care centre on eating a healthy diet?” across the respondents of three income groups, see appendix 17 (table 9).

And the respondents from urban area has responded as “Yes, completely and Yes, definitely” in higher proportion (59.6% and 57.4%) when compare to respondents from rural area (40.1% and 42.6%) to the questions “ Overall, was the main reason for this visit dealt with satisfactorily“ and “In the last 12 months, have you been given advice or help from your primary health care centre on eating a healthy

diet ?” which shows statistically significant difference between urban and rural respondents ($p < 0.0001$ and < 0.0001). Whereas for other questions of dental care and health care promotion, no statistically significant difference was observed between the urban and rural respondents, see appendix 17 (table 10).

6.6 Key findings from the correlations

6.6.1 Region (rural/urban)

- Rural patients have a problem with the distance between their residence and the PHCCs more than urban patients.
- Urban patients have more tests carried out in PHCCs than rural patients.
- Urban patients see their PHCCs as very clean compared to rural patients.
- Patients using PHCCs in rural areas saw no need for their PHCCs to open extra hour's compares to patients from patients using PHCCs in urban areas.
- Patients using PHCCs reported that they were satisfied with the service/reason for the visit, the dental care they received and had been advised on eating a healthy diet more so than rural patients.

6.6.2 Gender (male/female)

- Female patients were more satisfied than male patients with dental care and the advice they had been given on eating a healthy diet.

6.6.3 Monthly income

- The middle income group (3000-8000) were taking more prescribed medicines than other income groups.
- The middle income group (3000-8000) visit dentist regularly, visited a dentist at their PHCCs in the last 24 months, were overall satisfied with the reason for visit the dental care, their blood sugar levels been measured and been given advice on losing weight more than other income groups.

6.6.4 Age groups

- The middle age group (31-50) taking prescribed medicines don't pay for any prescribed medicines, asked a pharmacist for advice on medicines and don't asked traditional healer for advice in medicines more than other age groups.
- The middle age group (31-50) referred to hospital to be seen by specialist more than other age groups.
- The middle age group (31-50) wants their PHCCs to open one day per week either earlier in the morning or later in evening more than other age groups, while the younger age group have been put off going to their PHCCs because of the inconvenient opening times more than other age groups.
- The middle age group (31-50) visited a dentist at their PHCCs in the last 24 months more than other age groups, while the younger age groups (≤ 30) visit dentist regularly more than other age groups.

- The middle age group (31-50) their blood sugar levels been measured and been given advice on lose weight and eating healthy diet more than other age groups.

6.7 Summary

This chapter has presented the results from the quantitative arm of the study. The description and data from the questionnaires has been presented in relation to each question on the questionnaire. The descriptions for the correlations between the dependant and independent variables have also been presented in this chapter and the data tables can be found in appendix 17.

Chapter 7: Converging the findings

7.1 Introduction

Chapter 4 discussed the convergent mixed methods research design used in this study where the complimentary qualitative and quantitative methods can be converged or triangulated to validate the findings (Creswell, 2009). The data generated quantitative patient questionnaire and qualitative review of the evolution of PHCS in the KSA. The one to one interviews with MOH policy makers and service providers generated rich data which provides an in-depth picture of the factors influencing access and utilisation of PHCS in urban and rural areas of Riyadh province of the KSA. This chapter then turns its attention to presenting a discussion of the converged findings in relation to Andersen's, predisposing, enabling and need factors.

7.2 Converging the findings using Andersen's model.

Andersen's model was used as the conceptual framework to understand the factors influencing access and utilisation of PHCS in urban and rural areas of Riyadh province of the KSA. This section converges, or in other words discusses to what extent and in what ways results from the different types of data converge, diverge and relate to each other to provide a full picture of the barriers and facilitators to accessing and utilising PHCS in Riyadh province in the KSA (Creswell and Clark, 2011). This part of the interpretation is presented in relation to the Andersen's model (2008) (phase 5) adapted/used for this study. The findings from the review of the evolution and context of PHCCs in rural and urban areas (objective 1) the

MOH policy makers and the service providers (objective 2) and patient participants (objective 3) are converged under Andersen's predisposing, enabling and need factors.

7.2.1 Predisposing factors

Andersen defines predisposing factors as those variables that predispose individuals to use services (Andersen, 2008). The socio-demographic characteristics of the patients and the service providers did not present a barrier to patients accessing and utilising the PHCCs. Although the GPs and some nurses came from different cultural backgrounds, they were non-Saudis of which the majority were Muslim and shared this in common with the patients. The majority of the PHCC staff also spoke Arabic and were thus able to communicate with patients. More female than male patients were utilising the PHCCs. Gender, age and income did play a role in access and utilisation of PHCS. More women than men were accessing the PHCCs which can be attributed to women's physiology, biology and reproductive roles. The majority of patient's participants were between the ages of 31-50 years old. Income was less important as PHC in the KSA is free.

7.2.2 Enabling factors

Andersen defined enabling factors as those variables which facilitate or impede the use of services (Andersen, 2008). The MOH policy makers explained that since the PHCS in the KSA is free it promoted equitable access for citizens. The service providers and the MOH policy makers explained that the location of the

PHCCs in the heart of the communities that they were serving was a facilitator for patients accessing the PHCCs. Patients in rural areas however felt that distance of the PHCC from their residence was a barrier to accessing the PHCC. All PHCCs regardless of their rural or urban location, were viewed by the service providers to be poorly resourced and the service providers and the patient participants identified these as a barrier to accessing services. In particular there was a lack of services that should be available for all PHCC classified as B3 by the MOH. PHCCs classified by the MOH as B3 should have a laboratory, dentistry and accommodation for the GP /nurses available but in many cases the reality did not meet the requirement of the B3 classification. Many of the patient participants were unable to respond to questions on receiving tests or dental care at the PHCCs because the services were unavailable.

The service providers also felt that the services offered by the PHCC should be expanded to meet the changing need to provide health education to patients. Another resource issue was the condition of the buildings and the medical equipment which service providers felt was a barrier to patients accessing the service and receiving good quality medical attention. From the MOH policy makers perspective, the development of new purpose built PHCCs was underway and would be a facilitator efficiently and effectively. A review of the MOH policy documents showed that there has been a rise in the number of PHCCs in Riyadh province since 2008 in response to the growing demand/need of the population.

The service providers said that there were staff shortages and the key policy makers argued that there was a need for more trained staff and training for

existing staff to help to reduce the burden of chronic disease in the KSA. The availability of female staff at the PHCCs was also seen as an enabling factor. Despite a shortage of staff, patients overall service providers and patient participants felt that communication between GPs, nurses and patients was not hindered by the nationality or language. All non-Saudi GPs and nurses were able to communicate in Arabic.

The review of the literature and MOH documents highlighted that the health care system in KSA is free. The MOH policy makers pointed out that this was a key facilitator for patients trying to access the PHCCs. Medication at the PHCCs was also free as was referral and appointments at national hospitals. The service providers felt that the lack of availability of medications at the PHCC could however be a barrier to patients accessing the PHCCs.

Service providers, MOH policy makers and patients saw short waiting times to see the GP/nurse and the availability of segregated spaces as a facilitator to accessing the PHCCs. The service providers also felt that opening hours were a facilitator for patients to access the PHCCs but for patients in urban areas this was perceived as a barrier. It was also seen as a barrier for younger patient participants in rural and urban areas.

7.2.3 Need factors

Need factors refer to the perception of whether health services are required/or the need for care (Andersen, 2008). The developments in the HCS in the KSA

illustrate a response to increasing need (and demand) for HCS. MOH policy makers and service providers referred to the rise in chronic diseases in the KSA and patients said that the service providers were providing advice on healthy eating, weight management and checking blood sugar levels.

Key converged findings

Predisposing factors

- The socio-demographic characterises: the patients and the service providers did not present a barrier to patients accessing and utilising the PHCC.
- Language and communication: GPs and nurses who could speak Arabic and were culturally sensitive meant that patients were likely to access PHCCs.
- Cultural competency: all GPs and some nurses were non-Saudi, all the GPs were Muslims while some of the nurses were non-Muslims. All non-Saudi service providers spoke Arabic so were able to communicate with patients in their native language

Enabling factors

Barriers

- Distance from PHCCs to the rural residence: patients from rural areas said that this was a barrier to accessing and utilising the PHCCs.

- Lack of services: the service providers and patients said that there was a lack of dentistry and laboratory services which should be available since the PHCCs included in the study has a MOH B3 classification.
- New services: MOH policy makers and service providers said that there was a need for new services for example, health educators, nutritionists and physiotherapists.
- Staff shortages: the MOH policy makers and the service providers stated that there was a shortage of manpower/staff at the PHCCs, a lack of female staff particularly in rural areas.
- Lack of training: MOH policy makers and the service providers said that there was a need for more trained and qualified staff. MOH policy makers said that there was especially a need for training in managing chronic diseases.
- PHC infrastructure: service providers explained that the poor PHCC facilities (building, furniture) were a barrier for patients accessing and utilising the PHCCs.
- Poor equipment: service providers said that out of date medical equipment, lack of regular maintenance for existing medical equipment and the lack of computers/internet connections was a problem. This also impeded efficient patient referral to hospitals.

Facilitators

- Service provider behaviour/communication: patients said that there was good communication between them and the GPs and nurses regardless of nationality and religion.
- Free PHCS: MOH policy makers said that the fact that PHCS in the KSA are free, facilitates their use but acknowledged that this also increased the pressure on the manpower at the PHCCs.
- Service provision and improvements: MOH policy makers said that they were opening more PHCCs annually and over the last four years they have introduced new purpose built PHCCs using a new computerised priority system which will score where new PHCCs are needed based on the following criteria: population density, distance from the nearest PHCC and hospital, road network and health outcome to meet increasing demand for services.
- PHC infrastructure: MOH policy makers and service providers explained that new purpose built PHCCs were under construction and would include new up to date computer and medical equipment.
- Manpower: The MOH policy makers explained that it is addressing the shortage of specialist manpower by recruiting specialist consultants in family medicine. Approximately four hundred had been recruited at the time of the study.
- Opening hours, waiting time and segregated spaces: service providers and patients felt that the PHCC opening hours, waiting time for appointments

and the facility of having segregated waiting spaces all facilitated access to and movement around the PHCCs.

Need factors

- Increasing prevalence of chronic disease: MOH policy makers and the service providers acknowledged the rising rates of chronic diseases in the KSA and the urgent need to put a PHC prevention strategy in place.
- PHC developments in the KSA: new developments in PHC in KSA illustrate MOH response to increasing need (and demand) for HCS.

7.3 Summary

This chapter has presented the converged findings from the quantitative and qualitative parts of the data collection which has allowed for the triangulation of the findings. Converging the findings has given an in-depth understanding of the factors influencing the access and utilisation of PHCS in urban and rural areas of Riyadh province.

Chapter 8: Discussion

8.1 Introduction

Chapter five and six have presented the qualitative findings (contextual factors) and quantitative (individual factors) results respectively. Chapter seven presented the converged findings. This chapter presents a discussion of the findings with respect to the existing evidence base in the area and the extent to which research findings are similar or dissimilar to other studies that have used the Andersen model to frame their inquiry. The discussion is presented in relation to each of the research objectives. The section ends with a discussion of the usefulness of Andersen's model answer the research questions and meet the aim of the study.

8.2 Discussion of findings for objective one and two

The research objectives were developed to obtain 'different but complementary...' (Morse, 1999 pg. 122 in Creswell and Clark, 2011) data to meet the study aim and the answer the research questions. Objectives one and two were as follows:

Objective one: review of the evolution of PHCS in rural and urban areas of Riyadh province 2008-2013

Objective two: ascertain the perspectives of MOH policy makers and service providers on recent policy and planning developments in PHC and the barriers and

facilitators to access and utilisation of PHCS in rural and urban areas of Riyadh province.

The qualitative data collected to meet objective one has already been provided in Chapter two of this thesis and presents essential background and contextual information informing the evolution of PHCCs in the KSA. Some of this is presented in this section where it is used to contextualise MOH policy makers and the service provider's narratives. This section however, primarily discusses the views of the MOH policy makers and service providers on recent policy and planning developments in PHC the access and utilisation of PHCS in rural and urban areas of Riyadh province.

8.2.1 Defining rural and urban

Chapter 2 (section 2.3.5) discussed the definition of rural and urban and presented an argument for how it was used in this study. There was no consensus among the MOH policy makers on a definition of rural or urban or in the Strategic Plan of Primary Health Care in Saudi Arabia 2010-2020. In the absence of an official definition of rural and urban, this study relied on population density to distinguish between PHCC located in rural and urban areas of Riyadh province in the KSA. The discussions with the MOH policy makers highlighted that decisions about where to locate PHCCs was based on population density but there was no official definition on the figures for population density relating to rural or urban location in the KSA. At the time of the fieldwork for this study, the MOH had started a computerised PHCC priority system which scored locations in the KSA that

needed a PHCC based on population density, distance from the nearest PHCC, distance from the nearest hospital, road network and health outcomes.

Perceptions of the PHCC service providers re-emphasised this point and the majority of service providers working in PHCCs in urban areas (according to the definition of rural and urban used in this study) felt that the PHCC was actually in a urban area and the remainder felt that their PHCCs were located in rural areas. For the PHCC service providers their definition was based on the local environment including the standard of roads, the PHCC infrastructure for example poor quality PHCC buildings lack of facilities rather than population density. These aspects of the PHCC service were seen as barriers to patients accessing PHCCs and more so that levels of education and socio-economic class. These findings highlight that there is a need for a clear definition of urban-rural in the KSA context. The absences of clarity about definitions could potentially mean that resources are not being allocated efficiently and effectively to meet the needs of the local potentially leading to PHCC failing to meet their intended purpose e.g. prevention and promotion and reducing inequalities in health between the urban and rural populations of the KSA.

8.2.2 Barriers to accessing and utilising PHCCs

The health care workforce: staff shortages and training

The major challenges related to the health care workforce in the KSA the lack of Saudi/expatriate health care workforce, gender of staff and staff shortages and

lack of training. The problem is particularly acute because health care services are expanding and more manpower is required to run the services.

The MOH policy makers and the PHCC practice managers were Saudi nationals and all were men while the majority of nurses were women. There was clearly a gender dimension in the seniority of positions in the PHCCs which reflects employment in the KSA context generally. Alsaleh (2009) argues that Western perceptions on gender inequality are a myth in the KSA context and in actual fact women have a pre-eminent role within and outside the home. More recently, Al-Ahmadi (2011) points out that the last ten years have seen growing participation of Saudi women in all public and private sectors and that there is a clear strategic plans for including more Saudi women in leadership positions. She continues to point out however that organisational, personal and cultural challenges impede Saudi women becoming effective leaders and that the issues of women's equality needs to be addressed to enhance their leadership roles. Similarly (Sidani, 2005) also argues that developing the status of Saudi women requires a major reassessment of Muslim history and traditions. It is important to note that the poor visibility of women in leadership positions is not unique to the KSA context and across oriental and occidental cultures, across communist, socialist and capitalist systems and in both economically developed and developing countries the position of women are under-represented in senior positions because of cultural and education barriers, legal restrictions and corporate practices (Adler, 1993).

All the GPs and the majority of the nurses were non-Saudis. The KSA has a long tradition of importing non-Saudi health care staff recruited from around the world (Al-Shahri, 2002) because there are shortages of indigenous doctors and nurses (MOH, 2013; Al-Homayan *et al.*, 2013; Maben *et al.*, 2010). One of the problems with an expatriate workforce is the high turnover of staff (Almalki *et al.*, 2012; Almalki *et al.*, 2011b). There has been a drive over the last decade to educate and recruit Saudis into the KSA health care system as part of the ‘Saudiization’ initiative which was introduced after the Gulf War in (1990) when large numbers of the non-Saudi workforce left, leaving many industries and health care facilities in the KSA understaffed. The drive to recruit more indigenous health care staff was clearly not reflected in the sample for this study. Achieving and maintaining a stable nursing workforce is an on-going concern in the KSA. There is a high turnover of expatriate staff and low recruitment of indigenous staff (AlYami and Watson, 2014) which has led to staff shortages. Staff shortages were a constant issue for the MOH policy makers, PHCC managers and nurses in this research (this is discussed below in more detail).

The implications of a non-Saudi health care workforce have been discussed in chapter three (section 3.5), a major concern being the lack of cultural competency impacting on patient satisfaction (Al-Shahri, 2002). The majority of the GPs and nurses in our sample were Muslim. Employing staff from Muslim backgrounds may overcome some of the potential competency issues of having a non-Muslim health care workforce for a Muslim majority population. All the GPs and nurses either spoke Arabic on arriving in the KSA or had received language training and

so argued that communication with Arabic speaking patients was not a problem. Although GPs and nurses were Muslim and spoke Arabic it is essential that all nursing staff (regardless of religious/linguistic commonalities) undergo cultural competency training to ensure that they are introduced to the nuances of KSA culture.

Staff shortages and lack of staff training were identified as a barrier to patients accessing and utilising the PHCCs regardless of rural or urban location. The majority of the PHCC service staff agreed that there are staff shortages so not able to meet the rising demands of the population. At many PHCCs, nurses in particular were carrying out dual roles for example; dispensing medications in the pharmacy. Service providers were under trained for these roles. In few cases there was call for further training for the practice managers in order to improve the efficient running of the PHCCs.

The lack of female staff was a barrier for female patients to accessing and utilising the PHCCs. As discussed in Chapter five, section 5.2.5 one of the main factors shaping Saudi culture is Islam and this means that Saudi women would prefer to see a female GP. In some of the PHCCs, a female GP was not available or one female GP was not enough to meet the demand of the local female population. The same was the case for female nurses, who were also considered to be in short supply. In some cases service providers also explained that there was a shortage of male nurses which was also a barrier to patients accessing and utilising the PHCCs. One MOH policy makers also acknowledged that there was a shortage of

female staff in particular in rural remote areas. Clearly despite the MOH drive to recruit more health care staff internationally and from within KSA there continues to be a need to ensure that PHCC staff are available to meet the needs of the population.

Service provision

The sample of PHCCs selected for this had received a B3 classification from the MOH, which meant that they should have had a laboratory, dentistry and residential facilities (for nurses and the GP). However an important finding is that the majority of the PHCCs did not have the facilities necessary for the MOH B3 classification. Thus, there is clearly a discrepancy between what the MOH health records state and service availability at the PHCC centres. Even those PHCC that had some of the necessary services did not meet the requirements of the PHCC. For example; the PHCCs that had a laboratory were only able to carry out very basic investigations. In the event of complex investigations being needed the patients would have to be referred to the hospitals which delayed diagnosis. This finding is similar to a study by Bakarman *et al.*, (1996) reported that the quality of laboratory services in the PHCC in Al-Khobar area of the KSA was deficient according to 30% of their GP sample.

None of the PHCC in the sample offered dentistry services despite this being a requirement for a MOH B3 classification. Providing oral health is of particular concern and the WHO has recommended strategies for improving oral health in

developing countries should be seen as a priority and manpower to provide this service needs to increase accordingly (Petersen and Yamamoto, 2005).

Clearly this WHO recommendation was not being met for the sample of PHCC selected for this study.

In addition to PHCC service availability not meeting the MOH B3 classification many of the service providers referred to the lack of other important services for example; nutrition, physiotherapy and smoking cessation. There is already evidence from the KSA context that emergency departments in the KSA public hospitals are under pressure due to overuse. One reason for this has been suggested as the limited service options available at PHCCs (Alghanim and Alomar, 2011; Rehmani and Norain, 2007). The lack of services at PHCC selected for this study may be one factor contributing to the pressure on emergency departments.

There is also growing evidence for the evaluation of existing health education programmes in PHCCs, including health education during consultations (Al-Faris *et al.*, 1996) and the introduction of further health education programmes. There is also consequently a significant evidence base from the KSA, which calls for the pressing need for more health education related to the control and prevention of chronic illnesses (Al-Faris and Al-Taweel, 1999). Alnaif and Alghanim (2009) also reported that there is an urgent need to review and evaluate existing health education programmes carried out in the PHCCs. This study highlights that GPs were carrying out some prevention as part of normal practice but overall this was

ad hoc and limited. GPs and nurses argued for the need of more organised prevention education. Evidence from other parts of the world also shows that GPs have limited time for prevention (Brotons *et al.*, 2005; Yarnall *et al.*, 2003; Katon *et al.*, 2001; Wagner, 2000; Aiken *et al.*, 1979) and therefore specialist roles should be created in PHC to manage and roll out prevention programmes to populations served by PHCCs. In the KSA where the prevalence of chronic illness is rising, there is a pressing need for more health education through organised prevention and promotion programmes. A focus on self-management may help the prevention and management of chronic condition.

All service providers wanted improvements to the facilities, the focus of which was the need for purpose built PHCCs, equipment particularly up-to-date medical equipment, updating old computers and an electronic communications system and the services; the focus of which was providing more focussed health education programmes. The need for improvements in service provision was supported by the MOH key policy makers who pointed out that the MOH was investing in purpose build PHCCs. For the MOH policy makers the fact that figures for patients using the PHCCs was high every year highlighted that access was not a problem.

The standard the PHC building and facilities such as the physical condition of the PHC buildings, furniture and equipment were seen as a barrier to patients accessing and utilising the PHCCs by the service providers. This is similar to existing evidence on users' satisfaction with PHC settings and services. Qatari and

Haran (1999) in their study found that the type of PHC building (purpose built or rented) showed an association with satisfaction with PHC services (and literacy status of the household head). Serious concern was the out of date medical equipment, which was inefficient and consequently impacted on the quality of care that staff were providing. Existing equipment was not being maintained and there were frequent delays on orders for new equipment.

In addition to the inefficient medical equipment, there were some service providers who explained that there were shortages in the supply of medications at the PHCCs and in such cases, the patients would be sent to the hospital for medications which could be a long distance away from the PHCC/patient residence. Lack of availability of medications and referral to hospitals could be another reason for increased pressure on public hospitals. In a study looking at the availability of resources of diabetic care in PHC setting in Aseer region in the KSA Al-Khaldi and Al-Sharif (2002) reported that diabetes drugs were inadequate (as well as laboratory facilities) which was impacting on the delivery of diabetic care in the region. These findings are similar to studies in other parts of the KSA that have reviewed HCS in the KSA (Mahfouz *et al.*, 2007; Al-Homrany *et al.*, 2008; Amri *et al.*, 1997). These studies also report poor or the lack of facilities e.g. laboratories, the need to update health care systems, lack of the availability of drugs and therefore these factors need to be addressed to improve care.

Referral to the hospitals was made difficult because the responsibility of already overstretched GPs, who were often working with outdated computers and the lack

of a computerised referral system. At these PHCCs, GPs were consequently giving referral letters to patients to take to the hospitals themselves. Only one PHCC had a patient referral clerk. Where computerised referral systems have been introduced, the efficiency of these were compromised by poor internet supply. A study by Gibson *et al.*, (2013) found that better access to quality (measured by resources which included medical or nursing numbers, number of primary care episodes, service availability, operating hours and primary care practice size), PHC resulted in fewer hospitalisations for chronic disease. Findings from this study suggest a pressing need to improve the infrastructure and the range of services provided at PHCC in the Riyadh region of the KSA to avoid referrals to hospitals and help patients self-manage health conditions.

Lack of appointment system

The PHCCs managers explained that the lack of an appointment system was a barrier for some patients accessing services particularly patients who were employed. Booking appointments was made more difficult due to inefficient telephone lines and the lack of reception staff to attend to the calls. During the fieldwork phase of the research, trying to access the PHCC managers by phone was very difficult which also reaffirms the issue of poor telecommunications (see

Chapter 4, section 4.5.3 for further detail on this point)³⁶ Literature from the UK and the USA certainly points to lack of appointments as being a reason for patients overusing accident and emergency at hospitals (Fieldston *et al.*, 2012; Brim, 2008; Choudhry *et al.*, 2007; Hackman *et al.*, 2006; Lowe *et al.*, 2005; Sempere-Selva *et al.*, 2001) and this may be the case in the KSA context.

8.2.3 Facilitators to accessing and utilising the PHCCs

Free service

For the MOH policy makers an important facilitator to accessing and utilising the PHCCs was that the service was free but they did report that this was leading to increasing pressure in PHCS in the KSA.

Distance, transportation, opening hours, waiting times and segregated spaces

Since the majority of the PHCCs are located within the community the PHCC service staff did not see distance and transportation as a barrier to patients accessing and utilising the PHCC. Only service providers in three of the PHCCs classified as being located in a rural area, felt that because the PHCC was located outside of the community that distance and transportation to the PHCC may be a problem for patients when accessing and utilising the PHCC.

³⁶ Only one patient respondent answered questions A2-A5 because the patient answered yes to question A and so it was not appropriate to carry out a significance test on the responses for these questions.

The service providers explained that the PHCC opening times were a facilitator to accessing and utilising the PHCCs. Existing evidence has found that the more resourced the service is, for example; being open/available twenty four hours, seven days a week compared to a service open only three days a week, resulted in less hospitalisation for chronic conditions (Gibson *et al.*, 2013). In addition they did not feel that waiting times was a concern. All the PHCCs provided segregated spaces as required by Saudi culture, and this was therefore a facilitator to patients accessing the PHCCs. Alghanim (2011) in a study looking at the information needs of doctors in Riyadh region found that doctors based in rural areas were less likely to have access to online data sources, medical journals and internet websites, but doctors in rural and urban PHCCs reported poor overall access to resources. Alghanim (2011) concluded that there needs to be more information infrastructure in PHCCs in rural and urban areas of Riyadh province.

Service provider-patient communication

Staff attitude and interpersonal skills have been linked to influencing levels of access (Rogers *et al.*, 1999), particularly important, is language and religion in the KSA context (Al-Khathami *et al.*, 2010). In this study, the majority of the service providers argued that good doctor-patient communication enables patients to access and utilise the PHCCs. All service providers explained that they were able to converse with patients in Arabic and that regardless of differences in religion (all the GPs were Muslims regardless of their non-Saudi nationality and some nurses were Christians) that they were culturally competent. Al-Shahri (2002) has reported that inadequate cultural awareness by non-Saudi health professionals can

present a challenge when caring for Saudi patients and calls for training non-Saudi/non-Muslim health professionals working in the KSA (Al-Shahri, 2002). In this study the PHCCs were mainly staffed by non-Saudi doctors and the patients were Saudi nationals but cultural differences were not noted as being a barrier to accessing services (Al-Shahri, 2002). Even though cultural differences were not mentioned as being a barrier, it is important to point out that health care professionals should receive continued cultural competency training. Existing evidence highlights the benefits of cultural competency training for improved patient satisfaction with services (Thom *et al.*, 2006; Beach *et al.*, 2005a; Majumdar *et al.*, 2004; Kagawa-Singer and Kassim-Lakha, 2003; Anderson *et al.*, 2003; Brach and Fraserirector, 2000).

Service provision and improvements

The MOH policy makers at the time of the fieldwork for this study, the MOH had started a computerised PHCC priority system which scored locations in the KSA that needed a PHCC based on population density, distance from the nearest PHCC, distance from the nearest hospital, road network and health outcomes. The current health priorities in the KSA were tackling the increase in chronic diseases which were attributed to modernisation and consequent lifestyle changes.

8.3 Discussion of results for objective three

Objective three: Understanding patient's views on the barriers and facilitators from the accessing and utilising PHCS in rural and urban areas of Riyadh province.

Objective three took a quantitative approach to identify the barriers and facilitators from the patient perspective (individual characteristics) to accessing PHCS in rural and urban areas of Riyadh province.

8.3.1 Demographic profile of the patient respondents

A review of the demographic profile of the patient respondents showed that more women than men took part in the patient survey (43.1% of respondents were male and 56.9% were female). Existing evidence argues that women are more willing to seek help and therefore utilise HCS (Nnonyelu and Nwankwo, 2014; Davis *et al.*, 2014; Black *et al.*, 2012; Doherty and Kartalova-O'Doherty, 2010; Barata *et al.*, 2007; Redondo-Sendino *et al.*, 2006). The role of the PHCCs is to provide curative and preventative care. Maternity care is high on the agenda for PHCCs in the KSA which may also explain the higher number of women accessing the PHCCs. The results of this study support those found in a cross-sectional study carried out with women living in Riyadh province KSA, which found that a higher proportion of mothers were attending antenatal care than had been previously reported for the country and high rates of physician consultation (Al-Nahedh, 2004). Another study reported relatively high coverage of natal and post-natal care services in KSA (Baldo *et al.*, 1995) which may be a contributing factor. More frequent access to medical services by women can therefore be attributed to women's physiology, biology and reproductive roles.

The evidence base suggests that men are less likely to access medical services and report ill health (Doyal, 2001). Fewer men than women were accessing the

PHCCs selected for this study (see appendix 18). This findings is opposite to that found by Saleh (2004) who found in her study that more than women were utilising public doctors' services and attributed this to male molality verses women who are not allowed to drive in the KSA. Only one PHCC (B) showed that more men than women were attending the PHCC in the province. This may be because the PHCC is located within a farming area which is dominated by a male labour force, the majority of whose families live in Riyadh province which is approximately fifteen kilometres away. Al-Doghaither and Saeed (2000) in the study on consumer satisfaction with primary health service in the city of Jeddah in KSA do however report that more men than women (60%) of patients were attending the PHC. Statistically significant differences between women and men were reported for dental services. Overall, those patients that had used dental services at the PHCCs reported high levels of satisfaction which supports other studies carried out in Riyadh which have looked specifically as patient's satisfaction with aspects of dental care. A study by Al-Hamdan and Meshrif (2007) reported that most patients that completed the questionnaire survey were satisfied with implant treatment and similarly Awliya (2003) also reported that her survey participants were satisfied with the facilities, services and treatment received at the dental college of King Saud University.

Awliya (2003) did find that there were some variations in level of satisfaction by gender with men being more dissatisfied than women with the length of the dental appointments which she attributed to men working and appointments causing delay from work, and men being less satisfied with the availability of elevators

was due to the large number of students using the facilities. In this study the women who had used dental services at the PHCCs reported that they were more satisfied with dental services than men. Women were also significantly more satisfied with respect to health promotion advice and they had received more advice on healthy eating than men.

This may be because in the KSA (as with other countries in the Middle East) rates of obesity (Motlagh *et al.*, 2009; Al-Nozha *et al.*, 2005; Al-Nuaim *et al.*, 1997) and Diabetes Mellitus (Fatani *et al.*, 1987) are higher in women than men.

Al-Nozha *et al.*, (2005) report in their study in the KSA that women were significantly more obese than men with a prevalence of 44% and men 26.4%. Interestingly, the prevalence of overweight was significantly more prevalent in males 42.4% compared to 31.8% of females. Al-Nuaim *et al.*, (1997) also found that there were differences in that people living rural areas had lower levels of obesity (and this increased with age) than those living in urban areas and attribute this to traditional verses urbanised lifestyles. They concluded by saying that there was a need for better education programmes to reduce the prevalence of overweight and obesity. Al-Khashan (2012) also conclude in their study that there are significant differences between men and women with regards their health education needs, which must be taken into consideration when planning health education programmes. Other research in the KSA has reported that women have higher rates of satisfaction with medical care services than men (Al-Juhani, 1994). In the context of this research, higher numbers of women taking part in the patient survey may have also been influenced by the fact that overall more women than

men attend the PHCCs (see appendix 18) and that the researcher was a female and in the Saudi traditional Islamic segregated context it was easier for a female researcher to administer questionnaires with female patient participants than men. The structure of the PHCCs follows the prescriptions for gender divisions and the controlling of space in the public domain within Saudi/Islamic society generally and being a female researcher did not alter gender relations.

There is an extensive evidence base suggesting that age is a barrier to accessing health care (Hossen and Westhues, 2011). The average age of respondents who took part in the patient survey was between 31-50 years. This age group may be dominant within the patient respondents because the KSA has a young demographic profile. MOH (2013) shows that the 66.2% of the population of the KSA are between 15-64 years old (population 65 years and above was 3%. The total estimated population in 2013 was 29,9994,272). Older age has been reported to be associated with increasing use of PHC (Abu-Mourad, 2008). In addition the 31-50 age groups include women of child bearing age or young children who may be accessing the PHCCs for maternity services/care. Salah (2004) in her study found that mother's age of 35-44 was associated with an increase in children under five utilising HCS for acute respiratory infections. Finally for both men and women the prevalence of chronic disease increases with age (Kalantan *et al.*, 2001).

Socio-economic factors such as income (education and employment) is seen as a key enabling characteristic for accessing health care particularly, in terms of the

ability to pay for health insurance (Liu *et al.*, 2014a; Kuo and Lai, 2013; Hansen *et al.*, 2012; James *et al.*, 2006; Ensor and Cooper, 2004). The monthly income of patient respondents ranged from 3000 to 8000 SAR (£500-£1,333 exchange rate as of April 2015) per month. This is similar to other studies that have reviewed monthly incomes in the KSA (Saeed *et al.*, 2001). There may be two reasons for this. Firstly, evidence suggests that respondents often under-represent their income in survey research and secondly, in the KSA context caution must be applied to this result as many people's salaried income is supplemented by inherited allowances. Therefore, these figures may not be a true representation of income and should be treated with some caution. Thus future research should consider the possible relationship between earned income and inherited allowance to understand the nuances of this relationship and the impact that this has on SES accessing PHCC (and health care generally, paid health care/insurance) in the KSA context.

Approximately half of patient respondents were from urban areas and half from rural areas (urban 52.9% and rural 47.1%). The approximate equal numbers of urban and rural patient respondents reflects the sampling strategy used in the research. The definition of rural and urban as defined for the purposes of this study is reported in Chapter 2, section 2.3.5.

It must be noted before proceeding to discuss the barriers and facilitators to accessing and utilising PHCCs in Riyadh province in more detail; that sex, age, income and rural or urban location were the independent variables for the analysis

of the patient questionnaire survey (the remaining questions were the dependant variables. Please see Chapter 6, section 6.5).

8.3.2 Barriers to accessing and utilising PHCCs³⁷

Distance from residence

Distance from residence (Section B visiting the health care centre) was seen as a barrier (regardless of gender, age and income) to accessing PHCCs for the majority of participants in rural areas (65.8%). It was less of a barrier for participants living in urban areas (34.2%)³⁸.

This finding supports the extensive evidence base that suggests that access to health care is poorer in rural areas than urban areas citing distance from the patient's home to the health facility as a crucial barrier to accessing and utilisation of HCF. The distance decay effect was clearly visible in the results of the patient survey (McLaren *et al.*, 2014; Syed *et al.*, 2013; Zielinski *et al.*, 2013; McGrail, 2012; Zulian *et al.*, 2011; Gething *et al.*, 2004) and may be impacting on timely and regular visits to the PHCCs (Miller *et al.*, 2014; Mathison *et al.*, 2013; Regan and Wong, 2009) reported in his research that in the KSA users are reluctant to travel long distances to PHCCs because the KSA climate makes walking

³⁷The barriers and facilitators discussed in this chapter refer to the Correlations between the statistically significant (P-value <0.0001) independent and dependant variables.

³⁸Only two patient respondents to answered question B2 and so it was not appropriate to carry out a significance test on the responses for this question.

impractical and pointed out that even car travel is uncomfortable because of the high temperatures during the summer months. Other research in the KSA (Al-Ghamdi, 1982 and El Shabrawi, 1992) has reported similar findings and the results from this study further corroborate their findings. The majority of households in the KSA own a car so the availability of transportation to the PHCC was not considered an important factor that may intersect with distance from residence as a barrier to accessing the PHCC.

Service provision

Service provision is reported as a barrier to accessing HCS and high levels of satisfaction with service availability has also been linked to influencing access to HCS (Paphassarang *et al.*, 2002). In a study based in Jeddah city in the KSA Balbaid and Al-Dawood (1997) reported that there was a low rate of patient satisfaction in all the MOH facilities (hospitals and PHCCs) investigated with aspects of poor patient care and incomplete physical examinations patients. Similarly, Mansour and Al-Osimy (1996) and Al-Osimy (1994) reported that there was a discrepancy between the reported services and satisfaction survey. The patient respondents in this study also indicated that there was a lack of services available at the PHCCs. Although there was no direct question referring to services available at the PHCCs Section E (tests) and Section K (dental care) asked patient participants if they had received any tests or dental care at the PHCCs. Patient respondents were unable to respond to questions in these sections because they explained that the services did not exist at the PHCC.

For those that said that they had received tests, results from this study show that there was a significant difference between patient respondents in rural and urban areas with regards to having received tests (blood tests, swabs, smear tests) at the PHCCs with respondents visiting urban PHCCs being more likely to have had a test in the last twelve months than those patient respondents visiting PHCCs in rural areas, which may be leading to delays in care and the poor management of chronic illness and poor health outcomes (Syed *et al.*, 2013). What is however reassuring, is that those participants (regardless of whether they were visiting a PHCC in a rural or urban area said that they received the test results on time and that someone explained the results of the test in a way that they could understand, this indicates good communication between health care practitioners and patients which is often cited as a barrier to accessing health care. Other studies in Saudi have also reported good doctor patient communication leading to high levels of satisfaction among Saudi patients (Al-Mobeeriek, 2012).

With regards to the dental care however the differences between patients in rural and urban areas was significant in relation to overall satisfaction with the main reason for visiting the dentist at the PHCC. Patient respondents who visited a dentist in the rural PHCC were less satisfied with the service than those patient respondents who had visited a dentist in an urban PHCC. Overall women were more satisfied with the dental care they had received (regardless of urban or rural location of the PHCC). It is common for women to rate higher satisfaction with HCS than men. In a study carried out in Kuwait city assessing patient satisfaction with PHCS, the results showed that gender (as well as income, marital status and

occupations) was a factor in predicting with satisfaction (Al-Doghaither *et al.*, 2001). There was significant difference between the different age groups in terms of visiting a dentist in the last 24 months, with the oldest age group (>50) having the least attendance. The existing evidence base argues that age is a barrier to accessing health care as older people experience discrimination in accessing HCS (Hossen and Westhues, 2011). Attendance at the dentist is related to general oral hygiene practices. Research from the KSA shows that regular *miswak* (dental chewing stick made from the roots of the Arak tree) use is more frequent in older age and brushing using a tooth brush less prevalent. Differences in oral hygiene have been linked to age (socio-economic level and gender) which may explain why in this study, the older age group were the least likely to have visited the dentist in the last 24 months. Al-Khateeb *et al.*, (1991) have reported that the frequent use of *miswak* was associated with lower need for treatment and this perception may prevail among the KSA population and influence access to dentist at the PHCCs.

All respondents indicated that they had not seen anyone else, other than a doctor, from the PHCC. Research from other countries shows that patients often prefer to see a doctor rather than other health care professionals (e.g. nurses) for treatment, which reflects patient perceptions towards doctors and other health professionals (Laurant *et al.*, 2005). In the KSA however, it is normal procedure for patients to go directly to the doctor for a consultation who then refers the patient to a nurse as required. During the consultation the doctor may put together a follow-up plan with the patient which includes seeing a nurse at the next consultation but when

the patient attends for the follow-up appointment, she/he will report directly to the doctor again who will review the patient notes and refer to the nurse.

Lack of appointment system

In many countries (particularly in Western countries) the existing evidence base highlights that trying to make an appointment to see a GP is a major barrier to accessing PHCS (Ngo-Metzger *et al.*, 2003). The standard for PHCC in the KSA is that, there is no appointment system so patients can walk-in to the PHCCs and wait to see a GP. The patient respondents that took part in this study did not make an appointment with a doctor. The patient respondents walked into the PHCCs rather than book an appointment (patients mentioned this to the researcher during the fieldwork phase of the study and some expressed their frustration with the appointment booking service). In their study on patient's satisfaction with accessibility and services offered in Riyadh health centres (Al Faris *et al.*, 1994) reported that the absence of appointment systems was disliked by patients.

Opening times

The literature highlights that opening times (or inconvenient clinic times) for PHCC can be a barrier to accessing services (Beckman and Anell, 2013; Kontopantelis *et al.*, 2010; Scheppers *et al.*, 2006; Shaikh and Hatcher, 2005). The patient respondents visiting PHCC in rural areas were happy with the PHCC opening hours but the patient respondents visiting urban PHCC were less satisfied. There were significant differences by age group for satisfaction with PHCC opening hours. The ≤ 30 age group felt said that they were put off going to the

PHCC because of the opening times followed by the 31-50 age group. This finding supports the existing evidence that inconvenient opening times are a barrier for younger people accessing HCS (Tylee *et al.*, 2007; Kennedy *et al.*, 2013). The >50 age group were most satisfied with the PHCC opening times. Both the ≤30 age group and the 31-50 age group expressed a preference for the PHCCs opening earlier in the morning or later in the evening for one day a week.

8.3.3 Facilitators to accessing and utilising PHCCs

Service provider-patient communication

Poor communication between doctors, nurses and patients has also been reported as a barrier to accessing health care. The focus of research have been language barriers and much of this literature comes from countries with settler communities who have limited majority language fluency. The role of culture and how this influences the communication between the doctor and patient has also been noted (Ali *et al.*, 2006; Kreuter and McClure, 2004; Ali, 2003). Studies have tended to focus on the differences between ethnic groups for example; white GPs and patients from non-white ethnic groups. Overall where communication has been poor, patients have reported low levels of satisfaction. Doctor and nurse-patient communication has been reported as a problem in some studies carried out in the KSA (Al-Khathami *et al.*, 2010; Mohamed and Al-Dogaither, 2004; Al-Khaldi and Al-Sharif, 2002). Al-Khathami *et al.*, (2010) reported that patients were concerned about the language barrier during nursing care delivery with non-Arabic speaking nurses.

This study found that there was good overall communication between the doctor and patient respondents. The majority of patient respondents said that their doctor listened carefully, had enough time to discuss their medical problem and if they had questions to ask the doctor they got the answers and were treated with respect and dignity. These are some of the ideal features patients report as being important to creating positive relationships between the doctor (and other health care professionals) (Bendapudi *et al.*, 2006, Beach *et al.*, 2005b; Walsh and Kowanko, 2002).

All the GPs included in this study were non-Saudi national, which is the norm in KSA (MOH, 2013; Al-Shahri, 2002) (Egyptian, Pakistani, Sudanese and Tunisian) but spoke Arabic and were Muslim, this may be one reason for positive patient responses about seeing the doctor (Section C). None of the respondents said they needed help speaking Arabic. We can surmise therefore that having doctors who are able to communicate in the vernacular was a facilitator for patients accessing and utilising the PHCC. Al-Faris *et al.*, (1996) have reported that the language barrier between nurses and patients was one area that was disliked. The cultural competency of non-Saudi health professionals has been argued as impacting in patient satisfaction with HCS in the KSA context, with requests for increased cultural awareness training for non-Saudi health care professional (Al-Shahri, 2002). A MOH policy maker acknowledged the need to set standards for service delivery because doctors were coming from different countries having been educated in non-Saudi medical schools.

There was a significant difference between the different age groups, with the 31-50 age being more positive about seeing the doctor than the other age groups (≤ 30 and > 50). One reason for this may be that age is associated with the onset of chronic disease for example, age (obesity and family history) is associated with diabetes mellitus and considering the young age profile of the KSA population prevalence of diabetes mellitus (and other chronic conditions) is likely to increase in the future (Alqurashi *et al.*, 2011; Al-Nuaim *et al.*, 1997).

Al-Daghri *et al.*, (2011) show that the prevalence of Diabetes Mellitus T2, hypertension and CAD have worsened in Riyadh province of the KSA since the 1980s. Al-Nuaim (1997) and Al-Nozha (2004) also report a higher prevalence of Diabetes Mellitus in urban populations. Rising rates of chronic diseases in the KSA highlight the urgent need to target prevention programmes at the modifiable factors e.g. obesity, sedentary lifestyle, management, early identification.

There was also a significant difference between patient respondents in urban and rural areas in relation to understanding the treatment or action that was explained with fewer rural patient participants feeling that doctors explained reasons for any treatments. This may be because there is evidence reporting that people in urban areas are likely to be more educated than those living in the rural areas (Amin *et*

al., 2011).³⁹A study by Alghanim (2010) reported that rural respondents using hospitals were less informed about organ donation. Interestingly however, Khan *et al.*, (2012) in their study on non-compliance among diabetics attending PHCCs in Al Hasa district of the KSA reported that non-compliance among Diabetes Mellitus patients is higher than in rural participants.

The majority of participants said that they had been taking prescribed medications for the last twelve months and were not paying for their prescriptions, which are as would be expected, since medication is provided free of charge for all regardless of income at the PHCC and is funded by the MOH in the KSA.

³⁹Education (P3) was included as an independent variable however at the analysis stage it was discovered that this was a problematic question for a number of reasons: on reflection the question was poorly worded. The question read-How old were you when you left full-time education? There were four options for respondents to tick provided 16 years or less, 17-18 years, 19 years or over, still in full-time education. These categories were on reflection very ambitious and therefore open to interpretation which was difficult to enter into the data based and not have generated meaningful responses, for example the option of 16 or less does not allow the respondents to indicate if the education is high school or secondary. The categories It would have been better to ask what is your highest level of education? with the following options primary, secondary, high school, undergraduate university and postgraduate university. It was therefore seen as pragmatic to exclude this independent variable from the analysis. This was not seen as a problem because there were still four independent variables available. In addition education and income are proxy variables so example if someone has a good education they are likely to be earning more money. It is important however to be cautious as in the Saudi context for many people salaried income is supplemented inherited allowances.

The majority of patient participants had not asked the pharmacist for any advice on medicines in the last twelve months and those that had asked for advice said that the pharmacist's advice was helpful.

One of the reasons for the use of traditional healers is reported as the lack of accessibility to HCS (Al-Faris *et al.*, 2008). The majority of patient respondents had not gone to a traditional healer in the last twelve months for advice on medicines. This finding appears to be contrary to the existing evidence which has reported a high use of traditions medicine in the KSA, the Riyadh province specifically (Al-Faris *et al.*, 2008; Al-Faris, 2000). Other studies report patient's beliefs that traditional medicine is safe and effective (Al Saeedi *et al.*, 2003).

There were some significant differences in responses between the different age groups with the 31-50 age groups in relation to taking medication showing that they were the age group most likely to be taking medications for the last twelve months and were also the group least likely to see a traditional healer for help. The majority of patient participants had been referred to a hospital and there was a significant difference in relation to age with the 31-50 age group being referred to the hospitals more than the other age groups.

Service provision

All patient respondents said that they had their blood sugar levels measured, advice on weight and healthy eating. There were however some significant differences by gender, income and urban and rural location. More female than

male patient respondents said that they were given advice on eating a healthy diet in the 31-50 age group, had their blood sugar levels measured and were given advice on weight and eating a healthy diet when compared to the other age groups (≤ 30 and > 50). Existing evidence of the availability of health education at PHCCs in the KSA reports poor educational programmes for chronic diseases such as Diabetes Mellitus and hypertension, suggesting an urgent need for health education (Al-Khaldi and Al Sharif, 2005; Rasheed, 1998). These finding suggests that women, 31-50 year olds and the middle class population living in urban areas of the KSA are contributing more to rates of diabetes and obesity which supports the results of other studies that report variations in the prevalence of chronic diseases in the Middle East and the KSA (Esteghamati *et al.*, 2009; Al-Nozha *et al.*, 2004).

Patient respondents with an income of 3000-8000 S.R were more likely to have their blood sugar levels measured and advice on their weight compared to the other two income groups (≤ 3000 and 8000-15000 S.R). Results also showed that patient respondents attending PHCC in urban areas were being given more advice on eating a healthy diet compared to patient respondents attending rural PHCCs.

It is clear that the PHCCs are monitoring and addressing the health education needs of their patients related to chronic diseases but increasing prevalence rates of chronic diseases in the KSA and in Riyadh province suggest that more health education is needed to stem the epidemic of chronic disease in the KSA (Khan *et al.*, 2010; Alnaif and Alghanim, 2009; Al-Eissa, 2000; Al-Faris and Al Taweel, 1999) Interestingly, there was a significant difference in the way patient

respondents reported their health. The 31-50 year olds (together with the ≤ 30 age group) who also reported overall in the past four weeks that they had very good health. The >50 age group reported the worst health compared to the other age groups but still perceived health to be good. Service providers and MOH policy makers acknowledged the increases on prevalence in chronic diseases and were clear that service planning and delivery should be directed at prevention of the risk factors leading to chronic diseases.

Overall satisfaction with the PHCCs

Patient satisfaction has been used as an indication/measure of quality of care. Overall patient participants were positive about their PHCCs and the majority said they went to the PHCC because the PHCC dealt with them in a satisfactory way. The majority said that the PHCC was clean, it was very easy for them to move around inside the PHCC. This is particularly important in a segregated society like the KSA, because without clearly defined (and resourced) spaces for women and men, access to the PHCC and staff would be a major barrier to accessing and utilising the PHCCs. A study by Qatari and Haran (1999) carried out in Qateef in the KSA also reported that waiting area structure (confidentiality measures and environmental structures) was a factor in overall satisfaction with the PHCC.

There was one significant difference where patient respondents visiting urban PHCCs felt that their PHCCs were cleaner than the patient respondents visiting rural PHCCs. The results from this study support existing evidence on levels of satisfaction with PHCC's such as a study by Almoajel *et al.*, (2014) carried out in one PHCC in Jubail in the KSA, which identified that patients fluctuated

positively towards the level of care at the PHCC. Mansour and Al-Osimy (1993) report that patients in their study were moderately satisfied with services. Ali (1993) reported that the majority of study participants were satisfied with PHCS in the KSA, Al-Faris *et al.*, (1996) also found patients had shown a high rate (90%) for overall satisfaction with accessibility and services offered in Riyadh health centres and Makhdoom *et al.*, (1997) report reasonable satisfaction among their sample of participants in Al-Khobar in the KSA.

8.4 Using and applying the Andersen model to the KSA context

Andersen proposes a liner sequence of factors (with definitions) influencing access and utilisation of health care services: predisposing, enabling and need factors. Although useful as a starting point for this study it became apparent early on in the fieldwork that the linearity of the model was not applicable in the KSA context. Other studies that have used the Andersen model have also found that Andersen's enabling, predisposing and need factors do not correspond with utilisation. Bradley *et al.*, (2002) found in their study that enabling and need factors proceeded rather than preceded predisposing factors. In this study predisposing and need factors preceded enabling factors.

A useful element of the model was its adaptability and as with many other context specific studies (Seo *et al.*, 2016; Heider *et al.*, 2014; Tan, 2009; Lopez-Cevallos, 2008; Seiling *et al.*, 2005; Brown-Ogrodnick, 2004) the variables under the predisposing, enabling and need factors were adapted/expanded to be context specific. For example Andersen proposed demographic, social and beliefs

variables under predisposing factors. These were interpreted/defined for the KSA context. The existing evidence based on barriers and enablers to accessing and utilising health care and contextual information of the KSA drove the decision on which variables to include in the adapted version of the model.

The Andersen model provided a useful conceptual framework for the understanding of individual and societal forces and the interplay between these which allowed for a context specific understanding of the barriers and enablers to accessing and utilising PHCCs in the Riyadh province. To date many studies have emphasised individual characteristics (Andersen and Newman, 2005; Aday and Eichhorn, 1973; McKinlay, 1972; Lohr, 1972) being notable exceptions but the Andersen model allows for societal factors to be included. This was particularly important in the KSA where the social fabric of society is driven by a particularly conservative form of Islam. Thus adapting the Andersen model to the KSA context allowed for a more inclusive approach (understanding how societal/contextual factors impact on individual behaviour) to understanding the barriers and enablers to accessing and utilising health care in Riyadh province.

There is very little research of access and utilisation of health care in the KSA. This is one of the first studies that has used the Andersen model (phase five) to understanding the barriers and enablers to accessing and utilising PHCCs in the KSA context and provides important insights into the service level improvements to PHC in KSA (these are outlined in more detail in Chapter 9, Section 9.4). The findings from the study extending knowledge on access and utilisation of PHCC services in the KSA context.

This study provides an opportunity for similar research to be carried out in other provinces of the KSA and in other countries in the CCG with the caution that it is important to ensure that research follows the same iteration of the model (including variables) to ensure studies can be compared.

8.5 Summary

This chapter has presented a discussion of the findings from the study and how these are similar or dissimilar to the existing evidence base in this area. The discussion has been presented with respect to each of the study objectives and has focussed on the barriers and facilitators to accessing and utilising PHC in Riyadh province in the KSA.

Chapter 9: Study limitations, recommendations and conclusion

9.1 Introduction

This final chapter of the thesis presents the study limitations, the contributions to the field, and finally the conclusion.

9.2 Study limitations

This study provides some important information on the barriers and facilitators to the access and utilisation of PHCS in the Riyadh province in the KSA. There are several limitations to the study which have to be announced and reflected upon. Suggestions for acknowledging these for future research in this area are also proposed.

- Accessing information: there is a dearth of information in the public domain available on policy and practice related to the development of health care services in the KSA. The information that is available in the form of published peer reviewed papers is also at least four years old. One of the latest studies on the health care system in the KSA is (Almalki *et al.*, 2011a). More recent information mainly data was available on the MOH website but this information was often unavailable or out of date. At the time of the research the MOH website was poorly presented. Obtaining information from the MOH and the MOH policy makers was an arduous task because of the gender segregated society like the KSA.

- With the availability of limited and often out of date information it may have been prudent to have focused on more contextual discussion points in the topic guides which would have added further depth to the information already available on the policy and planning of PHCS in the KSA.
- There were only three MOH policy makers interviewed. The interview information had to be dealt with very carefully and to ensure anonymity, some identifiable data had to be removed which meant that some useful contextual information had to be removed. Having a larger sample of MOH policy makers would overcome this problem and generated more in-depth information but at the time of the research only three policy makers were involved with policy and planning for PHCS in the KSA. Future research would benefit from broadening this category by asking the policy makers for suggestions on MOH staff responsible for policy and planning to be interviewed.
- The researcher was working in a gender segregated society where women are not permitted to access male spaces. The gender bureaucracy in the KSA meant that the success of this study therefore was heavily dependent on the support of a *mahram* who acted as the researcher's research assistant. The researcher relied heavily on her *mahram* (research assistant) to support and negotiate access to MOH personnel/documents, ethics committee, research sites and the practice managers, and access male patients. The male research assistant was present during the one to one

interviews with the male service providers and the MOH policy makers and the way dynamic may have impacted on the responses the service providers gave.

- There were a number of limitations related to the patient questionnaire: Education (P3) was included as an independent variable, however at the analysis stage it was discovered that this was a problematic question for a number of reasons: on reflection the question was poorly worded, There were four answer options, these categories were on reflection very ambitious and was difficult to enter into the data base and not have generated meaningful responses (see footnote chapter 6 page 254).
- Section E (Test) and section K (Dental care) didn't have a question asking the patients about having the facilities in their PHCC, so if the section is empty, no answer for the whole section it doesn't mean that the patients doesn't fill it or missing it, it meant the PHCC doesn't have the facility and was interred in the data base under not available.
- Discard question K1 in the dental care section because its confusion and in reflection, the question was unnecessary because we were not interested in the private/public relationship-health outcome.

9.3 Contribution to the field

This study has made methodological and conceptual contributions to the discipline of HSR in a number of ways:

- There are very few studies looking at access and utilisation of health care in the KSA context. Thus this thesis contributes to policy, planning and delivery of PHCS in KSA.
- The adaption of Andersen's model to the KSA extends the model to a new context.
- The adaptation of Andersen's stage five version/model provides critical validation for the application of the variables and generalisability of the findings from the research.
- A mixed methods research design has made a theoretical and empirical contribution to the area of understanding the barriers and facilitators to access and utilisation of PHC in Riyadh province in the KSA.
- The study presents some important methodological discussions of working as a female research in a gender segregated society and the implications this has on the research process.

- The study presents some explanations for the problem of inequalities in health between urban and rural populations Riyadh province which can be relevant to service planning and delivery in other areas of the KSA.

9.4 Policy implications and recommendations

Based on a review of the main research findings from this study the following policy implications and recommendations are suggested:

There is increasing prevalence of chronic diseases in the KSA and the findings from this study suggest that there is limited health education for prevention of chronic diseases taking place in the PHCCs. What currently exists is unplanned.

Recommendation: prevention of chronic diseases should be elevated on the MOH agenda through policies directed at developing prevention programmes/interventions delivered through PHCC.

Although health education does take place, there is no planned education programmes being led by a designated health professional in the PHCCs.

Recommendation: it is important to have a specialist planning and delivery role to ensure that services can respond to the rising prevalence of the burden of chronic disease.

Although information on the prevalence of chronic disease is available this is mostly quantitative statistical data.

Recommendation: it is important to gather the views of Saudis on health behaviour (with particular reference to the role of culture and religion on health behaviour) which will allow researchers to gather in-depth information on the key messages needed and delivering prevention programmes/interventions.

Findings from this study showed that it was normal procedure for patients to go directly to the doctor for a consultation and then be referred by him onto a nurse as required. This is a very GP resource intensive procedure.

Recommendation: it is therefore that an appointment system should be introduced to streamline the way patients access GPs and nurses at the PHCCs.

Findings from this study highlight that there is limited consensus on planning, delivery and evaluation of PHCS in the KSA Although the MOH have produced a Strategic Plan of Primary Health Care in Saudi Arabia 2010-2020 there is little evidence of how this strategic plan is being actioned.

Recommendation: to ensure that there is a clear documentation/guidance on minimum standards to provide a benchmark against which PHCCs can be measured.

The PHCCs selected for this study had a MOH B3 classification which meant that the PHCCs should have a laboratory, dentistry, and residential facilities for the

GPs and nurses. The findings from this research show that there is a clear disparity between the MOH classification of the PHCCs and services available.

Recommendation: it is therefore recommended that the MOH carries out an audit of services available at PHCCs to ensure that services reflect their classifications.

Some evaluations of PHCS that have focussed on patient satisfaction and take place irregularly. The MOH requests practice managers to organise the completion of patient satisfaction forms but these are not completed on a regular basis and are thus not providing a complete and consistent picture of PHCS. In addition there is no evaluation of PHC facilities, manpower, and equipment.

Recommendation: the evaluations of PHCCs need to include patient views/satisfaction with the service but also measure facilities, manpower, and equipment. Including the views of service providers would also provide a holistic picture of the PHCS.

There has been a rapid expansion of PHCS in Riyadh but the PHCCs appear to be poorly resourced in terms of the buildings/facilities, equipment and manpower. Findings from this study highlight that existing PHCC building/facilities and equipment are inefficient. The MOH is building new purpose build PHCCs but existing health care facilities also need to be maintained.

Recommendation: the MOH should take a parallel approach and continue to resource and improve buildings/facilities and equipment in existing PHCCs.

There was a shortage of PHC health care staff. Many of the PHCCs service providers were carrying out dual roles. In addition to this, service providers lacked the specialist skills required to deal with health education/prevention of chronic diseases and there were some issues of cultural competency. The MOH is addressing the issue of specialist manpower by recruiting specialist consultants in family medicine. Approximately four hundred had been recruited at the time of the study.

Recommendation: the MOH needs to recruit more GPs, nurses, pharmacists, nutritionists and physiotherapists to meet patient demand and a greater proportion of these should be Saudis.

There is little existing evidence on the views of service providers from the KSA context. Findings from this study have highlighted fragmentation of policy, implementations and standards by triangulating the views of MOH policy makers, service providers and patients. It also discovered that there was poor communication between the PHCC managers/service providers and the MOH policy makers.

Recommendation: it is therefore important to include the views of policy makers, service providers and patients to obtain a holistic picture of barriers and facilitators to access and utilisation of PHCCs to understand how to deliver a more efficient service.

9.5 Conclusion

The study has highlighted some important information on access and utilisation of PHCS in Riyadh province in the KSA, which have important implications for policy, planning of PHCS and reducing inequalities in health and contributing to a reduction in the chronic disease burden in Riyadh province. A clear definition of rural and urban in the KSA context would enhance the comparability of future research carried out in the KSA as well as audit and evaluation of PHCS. This would also enhance comparison between research, audit and evaluation within the KSA as well as research of access and utilisation from other parts of the world. Continued research, audit and evaluation of PHCS in the KSA is essential for service improvement specifically reducing the barriers and learning from good practice (the facilitators). This study is offered as a small contribution to an important and under-researched area of HSR in the KSA.

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APPENDICES

Appendix 1 Information obtained from MOH visits

Table showing documentation and information obtained from MOH visits

Date	Phone call/Place	Action	Comments
First fieldwork trip 2013			
17 Sept.	Directorate of health affairs in Riyadh	Meet one of the HPM and asked if have any report/papers can help in this research	All the meeting my dad was with me
2 Oct.	MOH	Meet one of the health policy maker and asked if have any report/papers can help in this research	
6 Oct.	MOH	Meet one of the health policy maker and he give us two version (English/Arabic) of the strategic plan of PHC in Saudi 2010-2020	
Second fieldwork trip 2014			
13 July	Phone calls	Try to call the head of the General Directorate of Statistics and Information many times but nobody answer.	All these visit my dad was with me and it was during Ramadan the holly month while the people are fasting, some are taking holiday and working hours was less than usual.
14 July	MOH	We went to the information desk to ask about the General Directorate of Statistics and Information location in which building (MOH has four main building). After arrived to the department we introduce our self and we tell them what we need and they advise us to come tomorrow after Dhuhr prayer.	
15 July	MOH	We went again to the General Directorate of Statistics and Information and they send us to Development and Quality Department. After arrived to the department we wait for more than two hours nobody in the office and we left.	

16 July	MOH	We go back to the Development and Quality Department we introduce our self and what we need and they give us health statistics annual book for the year (2008, 2009, 2010) and ask us to come tomorrow to collect the rest.	
17 July	MOH	We go back again to the Development and Quality Department and they give us health statistics annual book for the year (2011, 2012) and they said they are still working in the 2013 health statistics annual book and we can get it from the MOH web page end of 2014 or beginning of 2015 we have to keep double checking the MOH web page.	
20 July	MOH	We went to the information desk to ask about the financial affairs general department location in which building (MOH has four main building). After arrived to the department we introduce our self and we tell them what we need and they advise us to come tomorrow and all the information we need will be ready for collected.	
21 July	MOH	We go back again to the financial affairs general department and we found them in an urgent case and they can't help us and they advise us to come back tomorrow.	
22 July	MOH	We go back again to the financial affairs general department and ask again about what we need and they told us to wait in the chair outside until the prepare all the information and after more than an hour waiting the give us the schedule of the health budget (in thousands of Saudi Riyals) of the Saudi MOH and its relation with the total government budget.	

Appendix 2 PHCCs classifications

MOH classifications of PHCCs based on services provided

PHCC Category	Description	Population served	Health services provided			Residence availability
			Laboratory	Radiology	Dentistry	
M1	Referral with Family Medicine and studies centre	< 32000	Yes	Yes	Yes	No
M2	Referral with Major Cities sector department	<32000	Yes	Yes	Yes	No
M3	Referral only services in major cities	<44000	Yes	Yes	Yes	No
M4	Referral with residence	<32000	Yes	Yes	Yes	Nursing Residence
M5	Referential with sector department and residence in external governorates	<16000	Yes	Yes	Yes	Nursing Residence
M6	Referential with expanded residence in external governorates	<16000	Yes	Yes	Yes	Nursing and lady doctor residence
M7	Referential, miniature, only services in crowded cities.	<32000	Yes	Yes	Yes	No
A	Located in remote areas in a vital location, more than 35 km away (more than 30 minutes access time) from nearest health service	>25000	Yes	Yes	Yes	Nursing, family doctor residence
B1	Non-referential centre	15000 to 25000	Yes	No	Yes	Nursing , Family doctor residence
B2	Non-referential centre	12000 to 15000	Yes	No	Yes	Nursing , Family doctor residence
B3	Non-referential centre	< 12000	Yes	No	Yes	Nursing , Family doctor residence
C	As B with expansion in the laboratory, designed for high population density areas.	<32000	Yes	No	Yes	No

Appendix 3 PHCCs manpower standards

Manpower standards at PHCCs in the KSA

Staff specialization	Number of staff/category											
	M1	M2	M3	M4	M5	M6	M7	A	B1	B2	B3	C
Family medicine consultant	1	1	1	1	1	1	1	0	0	0	0	0
Family medicine specialist	1	1	1	1	1	1	1	1	1	1	1	1
Family Medicine Resident physician	7	7	9	7	3	3	7	1	5	3	1	6
Laboratory specialist	1	1	1	1	1	1	1	0	0	0	0	0
Laboratory technician	2	2	3	2	1	1	2	1	2	1	1	3
Radiology specialist	1	1	1	1	1	1	1	0	0	0	0	0
Radiology technician	2	2	3	2	1	1	2	1	0	0	0	0
Dentist	2	2	2	2	2	2	2	1	1	1	1	2
Dentist assistant	2	2	2	2	2	2	2	1	1	1	1	2
Dental care specialist	1	1	1	1	1	1	1	0	0	0	0	1
Dental care technician	0	0	0	0	0	0	0	1	1	1	1	0
Epidemiologist	1	1	1	1	1	1	1	0	0	0	0	0
Epidemiology technician	2	3	3	2	2	1	2	1	1	1	1	2
Psychologist	2	2	2	2	2	2	2	0	0	0	0	0
Social specialist	2	2	2	2	2	2	2	0	0	0	0	0
Dietician	2	2	2	2	2	2	2	0	0	0	0	0
Anesthesia technician	2	2	3	2	1	1	2	0	0	0	0	0
Operation technician	2	2	3	2	1	1	2	0	0	0	0	0
Pharmacist	1	1	1	1	1	1	1	0	0	0	0	0
Pharmacist assistant	3	3	4	3	2	2	3	1	2	2	1	2
Medical registration specialist	1	1	1	1	1	1	1	0	0	0	0	0
Medical registration assistant	2	2	3	2	1	1	2	2	2	2	2	2
Health service technician - sterilization	1	1	1	1	1	1	1	1	1	1	1	1
Health centre director	1	1	1	1	1	1	1	1	1	1	1	1
Clerk	2	2	2	2	1	1	2	1	1	1	1	1
Administrative assistant	2	2	2	2	2	2	2	1	1	1	1	1
Correspondent	2	2	2	2	2	2	2	1	1	1	1	1
Health statistics specialist	1	1	1	1	1	1	1	0	0	0	0	0

Health statistics technician	0	0	0	0	0	0	0	1	1	1	1	1
Computer operator	1	1	1	1	1	1	1	1	1	1	1	1
Health education technician	1	1	1	1	1	1	1	1	1	1	1	1
Medical instruments specialist	1	1	1	1	1	1	1	0	0	0	0	0
Medical instruments technician	2	2	2	2	2	2	2	0	0	0	0	0
Telecommunications technician	1	1	1	1	1	1	1	1	1	1	1	1
Optical technician	1	1	1	1	1	1	1	0	0	0	0	0
Safety and security controller	2	2	2	2	2	2	2	0	0	0	0	2
Guardian	1	1	1	1	1	1	1	1	1	1	1	1
Servant	1	1	1	1	1	1	1	0	0	0	0	0
Laborer	2	2	3	2	2	2	3	1	1	1	1	2
Driver	3	3	3	3	3	3	3	0	0	0	0	0
Custodies keeper	2	2	2	2	2	2	2	0	0	0	0	0
Blood sample drawing technician (for women)	1	1	1	1	1	1	1	0	0	0	0	0
Blood sample drawing technician (for men)	1	1	1	1	1	1	1	0	0	0	0	0
Nursing specialist	2	2	2	2	2	2	2	0	0	0	0	0
Nursing technician-operations	1	1	1	1	1	1	1	0	0	0	0	0
Nursing technician (nurse)	9	9	10	9	7	7	9	4	5	5	4	9
Assistant nurse (health assistant A, B)	1	1	1	1	1	1	1	1	1	1	1	1
Ambulance assistant	1	1	1	1	1	1	1	*	*	*	*	*
Midwife (technician)	*	*	*	*	*	*	*	*	*	*	*	*
Total	85	86	96	85	72	71	86	27	33	30	26	45

* According to the requirement

Appendix 4 Access and utilisation of PHCS in KSA available thesis

Table List of thesis available in the public domain (Ethos, proquest and recercat) about access and utilisation of PHCS in KSA.

Title	Author	Year	Location	Method	Definition rural/urban sample selection	Tools
The Accessibility and Utilization of Primary Health Care Services in Riyadh, Kingdom of Saudi Arabia	Al-Shahrani	2004	Riyadh City	Quantitative	Based his definition of rural and urban as rural areas are those that are situated some distance outside of the boundary of the urban areas. No typical characteristics or boundary of urban areas is presents.	*Questionnaire survey with patients accessing PHCCs in public and private sectors.
Geographical Aspects of Health and Use of Primary Health Care Services in Jeddah, Saudi Arabia.	Al Magrabi	2001	Jeddah City	Quantitative	Distinguished between different PHCCs based on population distribution and population density.	*Questionnaire survey with patients accessing PHCCs in public sectors.
Acceptance and Utilisation of Primary Health Care In Jeddah City, Saudi Arabia	Bakhashwain	1995	Jeddah City	Quantitative	PHCCs located in old and new parts of the Jeddah city.	*Questionnaire survey with patients registered in the public PHCCs and unregistered people who try to seek medical care from other source, for example, private sector.
The Geography of Health care in Saudi Arabia: Provision and Use of Primary Health Facilities in Al Qassim Region	Al-Ribdi	1990	Al Qassim	Mixed methods	Looked at urban rural and desert areas. Selection of PHCCs based on PHCCs with typical characteristics of PHCCs in Riyadh province e.g. population characteristics, settlement patterns, levels of development in each area.	Questionnaire with patients and interview with MOH employees.

Appendix 5 English and Arabic MOH policy makers topic guides

Access and utilisation of primary health care services in Riyadh province

Topic Guide
Ministry of Health

1. Introduction

- 1 Thanks.
- 2 Introductions and the PhD research at the University of Bedfordshire and Ministry of Health.
- 3 Give background to the research: we are comparing access and utilisation of primary health care centres in urban and rural areas of Riyadh province.
- 4 The aim of the research is to have a better understanding of the barriers and enablers to the utilisation of primary health care services with the view to inform future improvements to these services for the local communities.
- 5 We are interviewing a selected cross section of health care professionals in primary health care centres and key policy makers at the Ministry of Health and carrying out a questionnaire survey with patients at ten primary health care centres (five rural and five urban).
- 6 This research is funded by the Ministry of Health, Saudi Arabia.
- 7 Brief outline of the interview: after this introduction we will talk a little about your role at the Ministry of Health and would like to discuss health care services, planning and procedure.
- 8 Explain about the consent procedure, emphasise confidentiality, and tape recording the interview, length of discussion (approx 1 hour).
- 9 The information from the research will be written up for my PhD thesis and is primarily for academic purposes. We will share the key findings with the Ministry of Health to help plan service delivery and service improvement.
- 10 Do you have any questions about the study or interview before we start?

Page 1

2. Biographical data

**Begin by discussing how the interview will work. Mention the importance of speaking up for the tape.*

- Please explain your present role at the Ministry of Health (probe for length³ of service, responsibilities²)?

3. Health care system planning and delivery

I would like to ask you about the health care planning and delivery in Saudi Arabia;

- Can you explain briefly how the health care system in Saudi is organised and functions (probe primary, secondary¹⁴ and tertiary care)?
- Can you describe the management and accountability procedures (probe for primary, secondary⁹ and tertiary care¹⁰)?
- What standards are adopted for health care service delivery (probe for benchmarks)?
- Do you actively involve patients and families in service planning (probe for public engagement⁷)?
- In your view what are the main health issues in Saudi Arabia (probe for chronic illness²¹, infectious diseases²⁰ and injuries¹⁹-ask for examples)?

4. Primary health care services

I would like to ask you specifically about primary health care services;

- What are the current planning priorities (probe for planning primary health care services and availability of any strategy documents⁷)?

- What are the key challenges faced in delivering primary health care services (probe for staffing, cultural, geographical, organisational issues)?
- I would like to discuss how you decide to locate primary health care centres (probe for classifications e.g. definition of rural and urban, services and service providers, allocation of funding)?

5. Barriers and enablers to the utilisation of primary health care services/centres

I would like to ask you your views on the barriers and enablers to accessing primary health care services/centres;

- *In your view what are the barriers facing patients accessing primary health care services/centres (probe for patient's knowledge, cultural/religious attitudes, geographical issues, socio-economic status)?*
- *What factors enable people to access primary health care centres (probe for patient's knowledge, cultural/religious attitudes, geographical issues, socio-economic status)?*
- *How do you think health care services/centres can be developed (if at all) to improve utilisation of services (probe for more financial resources, more targeted services, more manpower, more Saudi health care providers, more female health care service providers more training for service providers)?*

6. Documents

May I request some final information?

- *Do you have any published or unpublished reports that may be helpful to this research study (probe for reports and any grey literature)?*

- Is there anything else that you would like to tell us about the health care system in Saudi Arabia/primary health care/centres?

****Thank participant for their contribution, stress confidentiality.***

إتاحة خدمات الرعاية الصحية الأولية وتيسير الاستفادة منها في منطقة الرياض

دليل الموضوعات

وزارة الصحة

1- مقدمة

1- شكراً لكم

2 - مقدمات وأبحاث درجة الدكتوراه في جامعة بيدفوردشير و وزارة الصحة.

3- تقديم نبذة عن البحث: إننا نقارن مدى إتاحة الوصول إلى مراكز الرعاية الصحية الأولية والاستفادة منها في المناطق الحضرية والريفية في منطقة الرياض.

4- إن الهدف من هذا البحث هو الوصول إلى فهم أفضل للموانع والعوامل المساعدة على الاستفادة من خدمات الرعاية الصحية الأولية وذلك بهدف إدخال التحسينات المستقبلية على هذه الخدمات المقدمة للمجتمعات المحلية على أساس معلوماتي.

5- ونحن نقوم بإجراء المقابلات مع قطاع عرضي مختار من العاملين في مجال الرعاية الصحية في مراكز الرعاية الصحية الأولية بالإضافة إلى كبار واضعي السياسات في وزارة الصحة، كما نقوم بإجراء الاستبيان مع المرضى في عشرة من مراكز الرعاية الصحية الأولية (خمسة منها في المناطق الريفية وخمسة في المناطق الحضرية)

6- يمول هذا البحث من قبل وزارة الصحة بالملكة العربية السعودية.

7- موجز عام للمقابلة: بعد هذه المقدمة، سوف نتحدث قليلاً عن دوركم في وزارة الصحة، ونود أن نناقش سوياً أمور خدمات الرعاية والتخطيط والإجراءات المتبعة.

8- نتناول شرح الأمور الخاصة بإجراءات الموافقة، والتأكيد على السرية، وتسجيل المقابلات، وطول المناقشة (ساعة واحدة تقريباً).

9- سوف أسجل المعلومات المنبثقة من البحث في رسالة الدكتوراه الخاصة بي، وهي التي تستهدف في المقام الأول الأغراض أكاديمية. وسوف نرسل النتائج الرئيسية إلى وزارة الصحة للمساعدة في التخطيط في تحسين تقديم الخدمات الطبية.

10- هل لديكم أي أسئلة حول الدراسة أو المقابلة قبل أن نبدأ؟

2- بيانات السيرة الذاتية

*تبدأ من خلال مناقشة خطوات إجراء المقابلة. أذكر أهمية التحدث من خلال مقابلة مسجلة.

- يرجى توضيح ما هي وظيفتك الحالية في وزارة الصحة (نتناول طول مدة الخدمة، والمسؤوليات الوظيفية)؟

3- تخطيط وتوصيل نظام الرعاية الصحية

أود أن أسألكم عن تخطيط وتوصيل نظم الرعاية الصحية في المملكة العربية السعودية

- هل يمكن أن تشرح بإيجاز كيفية تنظيم نظام الرعاية الصحية في السعودية وما هي مهامه (بحث نظم الرعاية الصحية الأولية والثانوية والثلاثية المتقدمة)؟
- هل يمكنك وصف إجراءات الإدارة والمحاسبة (الاختبار بالنسبة للرعاية الأولية والثانوية والثلاثية المتقدمة)؟
- ما هي المعايير المعمول بها لتقديم الخدمات والرعاية الصحية (البحث في المعايير)؟
- هل تقومون بإشراك المرضى وأسرهم في التخطيط للخدمات (البحث في مشاركة الجمهور)؟
- من وجهة نظركم، ما هي القضايا الصحية الرئيسية ذات الأهمية في المملكة العربية السعودية (البحث في الأمراض المزمنة، والأمراض المعدية والاستفسار عن الإصابات على سبيل المثال)؟

4- خدمات الرعاية الصحية الأولية

أود أن أسألكم تحديدا عن خدمات الرعاية الصحية الأولية؛

- ما هي أولويات التخطيط الحالي (البحث في تخطيط خدمات الرعاية الصحية الأولية (البحث في تخطيط خدمات الرعاية الصحية الأولية ومدى توافر أي وثائق إستراتيجية)؟
- ما هي التحديات الرئيسية التي تواجهونها في مجال تقديم خدمات الرعاية الصحية الأولية (البحث في أمور التوظيف والأمور الثقافية والجغرافية، والقضايا التنظيمية)؟

- أود أن نناقش كيف قررتم تخصيص مراكز الرعاية الصحية الأولية (البحث في التصنيفات، على سبيل المثال، تعريف الخدمات الريفية والحضرية ومقدمي الخدمات، وتخصيص التمويل)؟

5- المعوقات والعوامل المساعدة على الاستفادة من الخدمات / مراكز الرعاية الصحية الأولية
وأود أن أعرف وجهات نظركم تجاه المعوقات والعوامل المساعدة على إتاحة خدمات/ مراكز الرعاية الصحية الأولية؛

- من وجهة نظركم، ما هي العوائق التي تحول دون إتاحة خدمات / مراكز الرعاية الصحية الأولية للمرضى (البحث في معرفة المريض، وأثر الاتجاهات الثقافية / الدينية، والقضايا الجغرافية، والحالة الاجتماعية والاقتصادية للمرضى)؟
- ما هي العوامل التي تمكن الناس من الوصول إلى مراكز الرعاية الصحية الأولية (البحث في معرفة المريض، والمواقف الثقافية / الدينية، والقضايا الجغرافية، والوضع الاجتماعي والاقتصادي للمرضى)؟
- كيف يمكن من وجهة نظركم تطوير خدمات مراكز / الرعاية الصحية (إن وجدت) من أجل تحسين الاستفادة من الخدمات (البحث توفير المزيد من الموارد المالية، وتوفير المزيد من الخدمات المستهدفة، والمزيد من القوى العاملة، والمزيد من مقدمي خدمات الرعاية الصحية السعوديين، وتوفير المزيد من مقدمي خدمات الرعاية الصحية للإناث والمزيد من التدريب لمقدمي الخدمة)؟

6- الوثائق

- هل تسمحون لي أن أطلب بعض المعلومات النهائية؟
 - هل لديك أي تقارير منشورة أو غير منشورة التي قد تكون مفيدة لهذه الدراسة البحثية (البحث في التقارير وأي أدبيات غير منشورة)؟
 - هل لديكم أي شيء آخر كنتم ترغبون في إخبارنا به عن نظام الرعاية الصحية في المملكة العربية السعودية / الرعاية الصحية الأولية / مراكز الرعاية الصحية الأولية؟
- أتقدم بجزيل الشكر لكل شارك على مساهمته وأؤكد لكم على توفير السرية الكاملة.

Appendix 6 English and Arabic service provider topic guides

Access and utilisation of public healthcare services in Riyadh province

Topic Guide

Primary Health Care Service Provider

1. Introduction

- 1 Thanks.
- 2 Introduce self, and the PhD research at the University of Bedfordshire and Ministry of Health
- 3 Give background to the research: we are comparing access and utilisation of primary health care centres in urban and rural areas of Riyadh province.
- 4 The aim of the research is to have a better understanding of the barriers and enablers to the utilisation of primary health care services with the view to inform future improvements to these services for the local communities.
- 5 We are interviewing a selected cross section of healthcare professionals in primary health care centres and the Ministry of Health and carrying out a questionnaire survey with patients at ten primary health care centres (five rural and five urban).
- 6 This research is funded by the Ministry of Health, Saudi Arabia.
- 7 Brief outline of the interview: after this introduction we will talk a little about your background, would like to know about the availability of services, your views on barriers and enablers to the utilisation of services and service improvements.
- 8 Explain about the consent procedure, emphasise confidentiality, and tape recording the interview, length of discussion (approx 1 hour).
- 9 The information from the research will be written up for my PhD thesis and is primarily for academic purpose. We will share the key findings with the Ministry of Health to help plan service delivery and service improvement.
- 10 Do you have any questions about the study or interview before we start?

2. Biographical data

**Begin by discussing how the interview will work. Mention the importance of speaking up for the tape.*

- Age?¹
- Gender?²
- Regional identity (probe for birthplace)?⁴
- Educational/employment background (probe for where educated, qualifications on leaving education and types of employment)?³
- Please explain your present role (probe for length of service in present role and Saudi health care)?⁵⁶
- Can you describe the area this primary health care centre is situated in (probe for rural / urban , poverty level, occupation of people)?²⁰
- Can you describe the organisation structure, management practices and accountability at the primary health care centre (probe for how it fits into wider Saudi health care system)?¹²¹³

3. Availability of services

I would like to ask you about the health care services that you provide;

- Can you tell me what services are provided by this primary health care centre (probe for types of services e.g. medical facilities/services e.g. x-ray, pharmacy, physiotherapy, availability of gender specific services, e.g. waiting areas, availability of female medical staff, gender specific prayer facilities, violence prevention, nutrition etc.)?¹⁶¹⁶
- What are the main services that the patients use (probe for MD visits, dental visits, curative, acute and preventive services)?¹⁵

- What (if any) other services do you feel should be provided *(probe for views on gaps in service provision e.g. missing services, staff / skill shortage)*?^{18 17 19}
- What are your opening hours *(probe for views on suitability of current opening hours)*?¹⁶
- What are your average waiting times *(probe for views on current waiting times for appointments, treatments, views on suitability)*?¹⁶
- Would you explain the patient referral routes to and from this primary health care centre *(probe for referral from schools, universities, governmental offices, other primary health care centres, self-referral and referral onto and from self referral secondary and tertiary care)*?¹⁶
- What are major health issues you see at the health care centre *(probe for chronic disease, infectious diseases, and injuries)*?^{23 22 21}
- What do you feel are the main challenges of your role working at this primary health care centre *(probe for communication, interpersonal relationships, availability of equipment and medicine, need for complementary services such as referral, labs or professional development)*?⁹

4. Barriers and enablers to the utilisation of services

I would like your views on what are the barriers and enablers that impact on patients access to this primary health care centre;

- How does the community come to know about the health services provided by this primary health care centre *(probe for participation in community events, outreach and communication/promotion literature)*?¹⁴
- Who uses this primary health care centre *(probe for characteristics of patients e.g. rural/urban community, gender, age, tribal identities,*²⁰

socio-economic status (levels of poverty), level of education)?

- In your view what barriers do different groups have to accessing this primary health care centre (*probe for which groups do not use the primary health care centre and why e.g. uncertainty on how to access the primary health care centre, religious and cultural barriers, language barriers, gender matching, transport, age, tribal identities, socio-economic status (poverty) level of education, anxiety about procedures*)?
- In your view how does patient's health behaviour impact utilisation of services (*probe for usage of traditional medicine, self-care etc.*)?
- In your view what enablers do different groups have to accessing this primary health care centre (*probe for accommodation of patient's, religious and cultural values-examples, location of primary health care centers*)?
- What do you consider are the key benefits of the service provided by this primary health care centre to the local community (*probe for understanding of health indicators like infant mortality, average life span, chronic conditions*)?
- Do you monitor patient satisfaction with services provided at this primary health care centre (*probe for how (if at all) this is done*)?

5. Service improvement

I would like to discuss how access and utilisation of primary health care services could be improved for your local population.

- How should information about primary health care services be made more accessible and acceptable for the community/ patients (*probe for what information should be provided/ given about primary health care centres and services provided, in what form is the information provided*)

i.e. health care staff, leaflets, videos, other methods. How to make the information understandable i.e. how to deal with communication issues like language/literacy, if interpreters were available to ease communication)?

- What are the key health conditions that should be addressed (*probe for what conditions should be covered, and how information should be delivered to ensure that the treatment is delivered in a proactive and timely manner*)?
- In your view are there any other factors that can help the patients receive quality and timely care?

6. Closing

I would like to ask you some final questions to bring the discussion to an end.

10

- Are you aware of any major new developments that will impact on primary health care that are currently taking place in the Saudi health system (*probe for knowledge on the opening of new services, new prevention and promotion programmes, health improvement initiatives*)?
- What issues/challenges does the Ministry of Health face regarding the organisation of primary health care services (*probe for understanding/views on the differences in understanding of public/primary health care areas for organisational improvement, new capacities needed*)?
- Is there anything else you would like to discuss related to health care services in Riyadh (*probe for a summary of views and any new comment*)?

**Thank participant for their contribution, stress confidentiality.*

الاشتراك في خدمات الرعاية الصحية العامة بمقاطعة الرياض والاستفادة منها

دليل موضوعي

مقدم خدمات الرعاية الصحية الأولية

1. مقدمة

- 1 شكر .
- 2 عرف بنفسك وبحث رسالة الدكتوراه في جامعة بدفورداشاير ووزارة الصحة
- 3 قدم خلفية عن البحث : إننا نقارن بين الاشتراك والاستفادة من مراكز الرعاية الصحية الأولية في المناطق الحضرية والريفية بمقاطعة الرياض .
- 4 الهدف من البحث هو الوصول إلى فهم أفضل لموانع ودعائم الاستفادة بخدمات الرعاية الصحية الأولية من أجل إخطار الجمعيات المحلية بالتطورات المستقبلية لهذه الخدمات .
- 5 إننا نلتقي بقطاع عرضي مختار من محترفي العناية الصحية في مراكز العناية الصحية الأولية ووزارة الصحة ونجري استفتاء مع المرضى في عشرة مراكز عناية صحية أولية (خمسة ريفية وخمسة حضرية) .
- 6 يُمول هذا البحث من قبل وزارة الصحة بالسعودية .
- 7 نبذة مختصرة عن المقابلة : بعد هذا التعريف سوف نتحدث قليلاً عن خلفيتك , وهل تود أن تعرف مدى كون الخدمات متاحة , وعن آرائك بخصوص عولق ودعائم الاستفادة من الخدمات وتطوير الخدمات .
- 8 اشرح الخطوات المتفق عليها وأكد على السرية وسجل المقابلة ومدة المناقشة (حوالي ساعة واحدة) .
- 9 سوف يتم تدوين المعلومات المستقاة من البحث من أجل أطروحة الدكتوراه الخاصة بي وهي مجموعة أساساً لغرض علمي . سوف نقسم النتائج الرئيسية مع وزارة الصحة للمساعدة على التخطيط لإيصال الخدمات وتطوير الخدمات .
- 10 هل لديك أية أسئلة بخصوص الدراسة أو المقابلة قبل أن نبدأ ؟

الاشتراك في خدمات الرعاية الصحية العامة بمقاطعة الرياض والاستفادة منها

دليل موضوعي

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- 1 شكر .
- 2 عرف بنفسك وبحث رسالة الدكتوراه في جامعة بدفوردشاير ووزارة الصحة
- 3 قدم خلفية عن البحث : إننا نقارن بين الاشتراك والاستفادة من مراكز الرعاية الصحية الأولية في المناطق الحضرية والريفية بمقاطعة الرياض .
- 4 الهدف من البحث هو الوصول إلى فهم أفضل لمواقع ودعائم الاستفادة بخدمات الرعاية الصحية الأولية من أجل إخطار الجمعيات المحلية بالتطورات المستقبلية لهذه الخدمات .
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- 6 يُمول هذا البحث من قبل وزارة الصحة بالسعودية .
- 7 نبذة مختصرة عن المقابلة : بعد هذا التعريف سوف نتحدث قليلاً عن خلفيتك , وهل تود أن نعرف مدى كون الخدمات متاحة , وعن آرائك بخصوص عوائق ودعائم الاستفادة من الخدمات وتطوير الخدمات .
- 8 اشرح الخطوات المتفق عليها وأكد على السرية وسجل المقابلة ومدة المناقشة (حوالي ساعة واحدة) .
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- 10 هل لديك أية أسئلة بخصوص الدراسة أو المقابلة قبل أن نبدأ ؟

2. بيانات السيرة الذاتية

* ابدأ بمناقشة كيف ستسير المقابلة . اذكر أهمية التحدث بصوت عال من أجل التسجيل .

- العمر ؟
- الجنس ؟
- الهوية الإقليمية (استكشف محل الميلاد) ؟
- الخلفية التعليمية / الوظيفية (استكشف أين تعلم وما هي مؤهلاته وقمنا ترك التعليم وأنواع الوظائف التي تقلدها ؟
- من فضلك اشرح دورك الحالي (استكشف مدة الخدمة في الدور الحالي وفي الرعاية الصحية السعودية) ؟
- هل يمكنك أن تصف المنطقة التي يقع فيها مركز الرعاية الصحية (استكشف ما إذا كانت ريفية أو حضرية ، واستكشف مستوى الفقر والحرفة التي يعمل فيها الناس) ؟
- هل يمكنك أن تصف هيكل المؤسسة والممارسات الإدارية والمحاسبة في مركز الرعاية الصحية الأولية (استكشف مدى ملاءمتها لنظام رعاية صحية سعودي أوسع) ؟

3. مدى كون الخدمات متاحة

أود أن أسألك عن خدمات الرعاية الصحية التي تقدمها :

- هل يمكنك أن تخبرني ما هي الخدمات التي يقدمها مركز الرعاية الصحية الأولية هذا (استكشف أنواع الخدمات مثل المرافق / الخدمات الطبية مثل أشعة إكس والصيدلية والعلاج الطبيعي ومدى توفر الخدمات المخصصة لأحد الجنسين مثل مناطق الانتظار ومدى توفر الطاقم الطبي النسائي ومرافق الصلاة المخصصة لأحد الجنسين ومنع العنف والتغذية وخلافه ؟

- ما هي الخدمات الرئيسية التي يستعملها المرضى (استكشف زيارات الأطباء وزيارات أطباء الأسنان والخدمات العلاجية والحادة والوقائية) ؟
- ما هي الخدمات الأخرى (إن وجدت) التي تشعر أنها ينبغي أن تُقدم (استكشف الآراء بشأن الفراغات في تقديم الخدمات مثل فوات الخدمات ونقص العاملين / المهارة) ؟
- ما هي الساعات التي تفتحون فيها (استكشف الآراء بخصوص مدى مناسبة ساعات الفتح الحالية) ؟
- ما هو معدل أوقات انتظارك (استكشف الآراء بخصوص أوقات الانتظار الحالية بالنسبة للمواعيد وجلسات العلاج , والآراء بخصوص مدى مناسبتها) ؟
- هل يمكنك أن تشرح طرق الإحالة إلى ومن مراكز الرعاية الصحية الأولية هذه (استكشف الإحالات من المدارس والجامعات والمكاتب ومراكز الرعاية الصحية الأولية الأخرى والإحالة الذاتية والإحالة على ومن الإحالة الذاتية والرعاية الثانوية والثالثة .
- ما هي القضايا الصحية الكبرى التي تراها في مركز الرعاية الصحية (استكشف المرض المزمن والمرضى المعدي والإصابات) ؟
- ما هي في اعتقادك أهم التحديات لدورك الذي تقوم به في مركز الرعاية الصحية الأولية هذا (استكشف الاتصالات والعلاقات ما بين الأشخاص ومدى توفر المعدات والدواء والحاجة لخدمات تكميلية مثل الإحالات أو المعامل أو التطوير الاحترافي) ؟

4. عوائق ودعائم الاستفادة من الخدمات

أود أن أعرف آراءكم حول ما هي العوائق والدعائم التي تؤثر على اشتراك المرضى في مركز الرعاية الصحية الأولية

- كيف يعرف المجتمع بالخدمات المؤداة من مركز الرعاية الصحية الأولية هذا (استكشف المشاركة في الأحداث المجتمعية والامتداد وأدبيات التواصل / الترفي) ؟

- من يستعمل مركز الرعاية الصحية الأولية هذا (استكشف مواصفات المرضى مثل المجتمع الريفي / الحضري والنوع والعمر والسمات القبلية والحالة الاجتماعية والاقتصادية (مستويات الفقر) ومستوى التعليم) ؟
- في رأيك ما هي العوائق التي تعوق المجموعات المختلفة من استخدام مركز الرعاية الصحية الأولية وما سبب عدم اليقين مثلا من كيفية الاشتراك في مركز الرعاية الصحية الأولية ، والعوائق الدينية والثقافية والعوائق اللغوية وتواصل الجنسين والنقل والعمر والسمات القبلية والحالة الاجتماعية والاقتصادية (مستويات الفقر) والقلق بشأن الإجراءات) ؟
- في رأيك كيف يؤثر السلوك الصحي للمريض على استفادته بالخدمات (استكشف استعمال الدواء التقليدي والعناية بنفس إلخ) ؟
- في رأيك ما هي الدعائم التي لدى المجموعات المختلفة للاشتراك في مركز الرعاية الصحية الأولية (استكشف إقامة المريض ومثل على قيمه الدينية والثقافية وموقع مراكز الرعاية الصحية الأولية) ؟
- ما الذي تعتبره الفوائد الرئيسية التي يقدمها مركز الرعاية الصحية الأولية هذا للمجتمع المحلي (استكشف فهم المؤشرات الصحية مثل معدل وفيات الأطفال ومتوسط الأعمار والأحوال المزمنة) ؟
- هل تراقب رضا المريض بالخدمات المقدمة في مركز الرعاية الصحية هذا (استكشف كيف يحدث هذا) إن حدث) ؟

5. تحسين الخدمات

- أود أن أناقش كيف يمكن تحسين الاشتراك والاستفادة من خدمات الرعاية الصحية الأولية لسكانكم المحليين .
- كيف ينبغي أن تصبح المعلومات الخاصة بخدمات الرعاية الصحية الأولية أسهل تناولا وأكثر إرضاء للمجتمع / للمرضى (استكشف ما هي المعلومات التي ينبغي توفيرها / تقديمها عن مراكز الرعاية الصحية

- الأولوية والخدمات المقدمة ، وفي أي صورة تُقدم المعلومات ، مثلاً طاقم العاملين في الرعاية الصحية والمنشورات والمقاطع المرئية والأساليب الأخرى . كيف يمكن جعل المعلومات مفهومة أي كيف يتم التعامل مع قضايا التواصل كاللغة / الأدب ، إذا كان المترجمون الفوريون متوفرين لتسهيل التواصل) ؟
- ما هي الأحوال الصحية الرئيسية التي ينبغي مخاطبتها (استكشف ما هي الأحوال التي ينبغي تغطيتها ، وكيف ينبغي إيصال المعلومات لضمان أن العلاج يُقدم على نحو ؟ وفي موعده) ؟
- في رأيك ما هي العوامل الأخرى التي يمكن أن تساعد المرضى على تلقي علاج جيد وفي موعده ؟

6. خاتمة

أود أن أسألك بعض الأسئلة الختامية لإنهاء المناقشة .

- هل أنت مدرك لأية تطورات كبرى جديدة سوف تؤثر على الرعاية الصحية الأولية تحدث الآن في نظام الصحة السعودي (استكشف مدى المعرفة بافتتاح خدمات جديدة وبرامج جديدة للوقاية وللترقية ومبادرات لتحسين الصحة) ؟
- ما هي القضايا / التحديات التي تواجهها وزارة الصحة فيما يخص تنظيم خدمات الرعاية الصحية (استكشف الفهم / الآراء بشأن الاختلافات في فهم مناطق الرعاية الصحية العامة / الأولية لتحسين التنظيم ، بحاجة إلى كفاءات جديدة) ؟
- هل هنالك أي شيء آخر تود أن تناقشه يتعلّق بخدمات الرعاية الصحية بالرياض (استكشف ملخصاً للآراء وأي تعليق جديد) ؟

*شكر المشترك على مساهمته وأكد على السرية .

Appendix 7 Qualitative sample

Number of sample (service providers and MOH policy makers) interviewed in the study

PHC service provider interviews							
No.	Date 2013	PHCC	Rural/Urban (Governorate /Region)	Number of participants	Description of participants		
					Profession	Gender	Nationality
1	19/9	A	Urban (Dharma)	4	1 Manager 1 GP 1 GP 1 Nurse	Male Male Female Female	Saudi Egyptian Sudanese Indian
2	24/9	B	Urban (Al-Deriyya)	3	1 Manager 1 GP 1 Nurse	Male Male Male	Saudi Bangladeshi Saudi
3	1/10	D	Urban (Al-Riyadh)	3	1 Manager 1 GP 1 Nurse	Male Male Female	Saudi Egyptian Saudi
4	3/10	E	Urban (Al-Zulfi)	4	1 Manager 1 GP 1 GP 1 Nurse	Male Male Female Female	Saudi Sudanese Egyptian Indian
4	5/11	J	Urban (Al-Kharj)	3	1 Manager 1 GP 1 Nurse	Male Male Male	Saudi Egyptian Saudi
6	25/9	C	Rural (Rammah)	3	1 Manager 1 GP 1 Nurse	Male Male Female	Saudi Egyptian Bangladeshi
7	22/10	F	Rural (Al-Hareeq)	3	1 Manager 1 GP 1 Nurse	Male Male Female	Saudi Egyptian Indian
8	23/10	G	Rural (Wadi Al-Dawaser)	4	1 Manager 1 GP 1 GP 1 Nurse	Male Male Female Female	Saudi Pakistani Tunisia Saudi
9	28/10	H	Rural (Al-Aflaj)	3	1 Manager 1 GP 1 Nurse	Male GP acting Female Female	Sudanese Pakistani Indian
10	29/10	I	Rural (Al-Saleel)	3	1 Manager 1 GP 1 Nurse	Male Male Female	Saudi Pakistani Indian

MOH policy makers interviews						
No.	Date 2013	Location (Governorate /Region)	Position	Description of participants		
				Profession	Gender	Nationality
1	17/9	Riyadh	Policy maker	Family med. consultant	Male	Saudi
2	2/10	Riyadh	Policy maker	Family med. consultant	Male	Saudi
3	6/10	Riyadh	Policy maker	Consultant family and community med	Male	Saudi

Appendix 8 MOH policy makers coding frame

MOH policy makers coding frame developed and applied to the transcripts

Themes and Sub – Themes	Description of the Themes and Sub-Themes
Theme	Present role in MOH
Theme	Health care system planning and delivery in KSA
Sub – Theme	Decision on locating PHCCs and defining urban and rural location
Sub – Theme	Management accountability and standards
Theme	Current planning priorities for PHC in KSA
Theme	Patients access and utilisation of PHCCs
Theme	Service improvement

Appendix 9 Service provider coding frame

Themes and Sub – Themes	Description of the Themes and Sub-Themes
Theme	Health care provider roles and responsibility
Theme	Defining rural and urban
Theme	Auditing the service
Theme	Barriers to accessing PHCCs in rural and urban Riyadh
Sub – Theme	Discrimination
Sub – Theme	Staff shortage and training skills
Sub – Theme	Lack of female staff
Sub – Theme	Service availability
Sub – Theme	PHCCs facilities
Sub – Sub - Theme	PHCC infrastructure
Sub – Sub - Theme	Problem with medical equipment
Sub – Sub - Theme	Availability of medicine
Sub – Sub - Theme	Electronic record system for referral from PHC to hospitals
Theme	Facilitators to accessing PHCCs in rural and urban Riyadh
Sub – Theme	Distance and transportation to the PHCCs
Sub – Theme	PHC opening hours and waiting time
Sub – Theme	Service provider – patient communication
Sub – Theme	Segregated spaces for women and men
Theme	Developing services
Sub – Theme	Service improvement
Sub – Theme	Providing health education
Sub – Theme	Improvements of PHCS planning and delivery

Appendix 10 English and Arabic patient questionnaire

Primary Health Care Services Questionnaire

What is the survey about?

This survey is about your experience of the services provided by the primary health care centres in your area. Your views are very important in helping us to find out how well the services work and how they can be improved.

Who should complete the questionnaire?

If you need help to complete the questionnaire, the researcher will support you but question should be from your point of view.

Completing the questionnaire

For each question please tick clearly inside one box.

Sometimes you will find the box you have ticked has an instruction to go to another question. These instructions are always shown in **blue** text. By following the instructions carefully you will miss out questions that do not apply to you.

Don't worry if you make a mistake; simply cross out the mistake and put a tick in the correct box.

Please do not write your name or address anywhere on the questionnaire.

Questions or help?

If you have any queries about the questionnaire, please ask the researcher.

Your participation in this survey is voluntary.

If you choose not to take part in this survey it will not affect the care you receive from the primary health care centre in any way. If you do not wish to take part, or you do not want to answer some of the questions, you do not have to give us a reason.

Acknowledgement

The questions from this questionnaire have been adapted from "Local Health Services Questionnaire" version dated 27th November 2007. We gratefully acknowledge the support of the Care Quality Commission, UK to use the questionnaire.

Code:

Date:

Your answers will be treated in confidence.

A. MAKING AN APPOINTMENT

Please answer these questions thinking about any health care EITHER for yourself OR for a child in your care

A1. Have you made an appointment with a doctor from your primary health care centre in the last 12 months?

- 1 ☐ Yes → Go to A2
2 ☐ No → Go to B1

Thinking about your LAST appointment or home visit ...

A2. The last time you saw a doctor from your primary health care centre, how long did you wait for an appointment?

- 1 ☐ I was seen without an appointment → Go to A5
2 ☐ I was seen on the same working day → Go to A4
3 ☐ I waited 1 or 2 working days → Go to A3
4 ☐ I waited more than 2 working days → Go to A3
5 ☐ It was a pre-planned appointment or visit → Go to A4
6 ☐ Can't remember → Go to A4

A3. What was the main reason you waited? (Tick ONE only)

- 1 ☐ I wanted to see my own choice of doctor
2 ☐ I could not get an earlier appointment with any doctor at my health centre
3 ☐ It was not convenient for me to have an appointment at any earlier time
4 ☐ Another reason

A4. How do you feel about the length of time you waited for an appointment with a doctor?

- 1 ☐ I was seen as soon as I thought was necessary
2 ☐ I should have been seen a bit sooner
3 ☐ I should have been seen a lot sooner

A5. If you want to make a doctor's appointment 3 or more working days in advance does your primary health care centre allow you to do that?

- 1 ☐ Yes
2 ☐ No
3 ☐ Don't know/ Not sure

B. VISITING THE PRIMARY HEALTH CARE CENTRE

B1. Is the distance from your residence an issue in visiting your primary health care centre?

- 1 ☐ Yes
2 ☐ No

Thinking about your LAST visit to the health centre...

B2. How long after your appointment time did you have to wait to be seen?

- 1 ☐ I did not have an appointment
2 ☐ Seen on time or early
3 ☐ Waited up to 15 minutes
4 ☐ Waited 16-30 minutes
5 ☐ Waited 31 minutes or longer
6 ☐ Can't remember

C. SEEING A DOCTOR

Thinking about the LAST TIME you saw a doctor from your health centre...

C1. Did the doctor listen carefully to what you had to say?

- 1 ☐ Yes, definitely
- 2 ☐ Yes, to some extent
- 3 ☐ No

C2. Were you given enough time to discuss your health or medical problem with the doctor?

- 1 ☐ Yes, definitely
- 2 ☐ Yes, to some extent
- 3 ☐ No
- 4 ☐ I did not need to discuss anything

C3. If you had questions to ask the doctor, did you get answers that you could understand?

- 1 ☐ Yes, definitely
- 2 ☐ Yes, to some extent
- 3 ☐ No
- 4 ☐ I did not need to ask any questions
- 5 ☐ I did not have an opportunity to ask questions

C4. Did the doctor explain the reasons for any treatment or action in a way that you could understand?

- 1 ☐ Yes, completely
- 2 ☐ Yes, to some extent
- 3 ☐ No
- 4 ☐ I did not need an explanation
- 5 ☐ No treatment or action was needed

C5. Did the doctor treat you with respect and dignity?

- 1 ☐ Yes, all of the time
- 2 ☐ Yes, some of the time
- 3 ☐ No

D. MEDICINES (e.g. tablets, ointment, oral contraceptives)

Thinking about the LAST time you had a new medicine prescribed for you ...

D1. Have you been taking any prescribed medicine(s) for 12 months or longer?

- 1 ☐ Yes
- 2 ☐ No

D2. Did you have to pay for any prescribed medicine(s) for last 12 months?

- 1 ☐ Yes
- 2 ☐ No

D3. In the last 12 months, have you asked a pharmacist for any advice on medicines?

- 1 ☐ Yes → Go to D4
- 2 ☐ No → Go to D5

D4. Was the pharmacist's advice helpful?

- 1 ☐ Yes, definitely
- 2 ☐ Yes, to some extent
- 3 ☐ No
- 4 ☐ Not sure

D5. In the last 12 months, have you asked a traditional healer for any advice on medicines?

- 1 ☐ Yes → Go to D6
- 2 ☐ No → Go to E1

D6. Was the traditional healer's advice helpful?

- 1 ☐ Yes, definitely
- 2 ☐ Yes, to some extent
- 3 ☐ No
- 4 ☐ Not sure

E. TESTS

E1. In the last 12 months, have you had any tests (e.g. blood tests, swabs, smear tests) carried out by anyone from your primary health care centre?

- 1 ☐ Yes → Go to E2
- 2 ☐ No → Go to F1
- 3 ☐ Can't remember → Go to F1

Thinking about your most recent test(s)....

E2. Did you get your test results on time?

- 1 ☐ Yes, I got them on time or early
- 2 ☐ No, I got the results later than expected
- 3 ☐ I am still waiting for the results
- 4 ☐ I did not get the results at all

E3. Did someone explain the results of the tests in a way you could understand?

- 1 ☐ Yes, definitely
- 2 ☐ Yes, to some extent
- 3 ☐ No
- 4 ☐ I am still waiting for the results
- 5 ☐ Not sure/ can't remember

F. REFERRALS

F1. In the last 12 months, has anyone at your primary health care centre referred you to a specialist (e.g. a hospital consultant)?

- 1 ☐ Yes
- 2 ☐ No

G. SEEING ANOTHER PROFESSIONAL FROM THIS PRIMARY HEALTH CARE CENTRE

G1. Have you seen anyone else from your primary health care centre other than a doctor in the last 12 months?

- 1 ☐ Yes → Go to G2
- 2 ☐ No → Go to J1

G2. The last time you saw someone other than a doctor from your primary health care centre, who did you see? (Tick ONE only)

- 1 ☐ A nurse practitioner
- 2 ☐ A midwife
- 3 ☐ A dentist
- 4 ☐ A health educator
- 5 ☐ Someone else
- 6 ☐ I was not sure who I saw

G3. The last time you saw this person, how long did you wait for an appointment?

- 1 ☐ I was seen without an appointment → Go to G6
- 2 ☐ I was seen on the same working day → Go to G5
- 3 ☐ I waited 1 working day → Go to G4
- 4 ☐ I waited 2 working days → Go to G4
- 5 ☐ It waited more than 2 working days → Go to G4
- 6 ☐ It was a pre-planned appointment or visit → Go to G5
- 7 ☐ Can't remember → Go to G5

G4. What was the main reason you waited? (Tick ONE only)

- 1 ☐ I wanted to see **my own choice** of professional
- 2 ☐ I could not get an earlier appointment with **any other professional** at my health centre
- 3 ☐ It was **not convenient for me** to have an appointment at any earlier time
- 4 ☐ Another reason

G5. How do you feel about the length of time you waited for an appointment with this person?

- 1 ☐ I was seen as soon as I thought was necessary
- 2 ☐ I should have been seen **a bit sooner**
- 3 ☐ I should have been seen **a lot sooner**

Still thinking about the LAST TIME you saw someone other than a doctor from your health centre...

G6. Did that person explain the reasons for any treatment or action in a way that you could understand?

- 1 ☐ Yes, completely
- 2 ☐ Yes, to some extent
- 3 ☐ No
- 4 ☐ I did not need an explanation
- 5 ☐ No treatment or action was needed

G7. Did that person treat you with respect and dignity?

- 1 ☐ Yes, all of the time
- 2 ☐ Yes, some of the time
- 3 ☐ No

G8. Did you have confidence and trust in that person?

- 1 ☐ Yes, definitely
- 2 ☐ Yes, to some extent
- 3 ☐ No

J. OVERALL ABOUT YOUR HEALTH CENTRE

J1. Was the main reason you went to your primary health care centre dealt with to your satisfaction?

- 1 ☐ Yes, completely
- 2 ☐ Yes, to some extent
- 3 ☐ No

J2. In your opinion, how clean is the primary health care centre?

- 1 ☐ Very clean
- 2 ☐ Fairly clean
- 3 ☐ Not very clean
- 4 ☐ Not at all clean
- 5 ☐ Can't say

J3. How easy do you find it to move around inside the primary health care centre?

- 1 ☐ Very easy
- 2 ☐ Fairly easy
- 3 ☐ Not at all easy
- 4 ☐ Can't say

J4. In the last 12 months, have you ever been put off going to your primary health care centre because the opening times are inconvenient for you?

- 1 ☐ Yes, often
- 2 ☐ Yes, sometimes
- 3 ☐ No

J5. If it were possible for your primary health care centre to open at additional times, which of these times would you most like it to be open? (Tick ONE only)

- 1 ☐ No extra hours
- 2 ☐ Early mornings (before 8am)
- 3 ☐ Evenings (after 6pm)
- 4 ☐ Saturdays
- 5 ☐ Fridays

J6. If your primary health care centre were to be open either earlier in the morning or later in the evening, how many days a week would you want this to happen?

- 1 ☐ One day per week
- 2 ☐ Two or three days per week
- 3 ☐ Four or five days per week
- 4 ☐ Don't know

J7. If your primary health care centre were to be open extra hours but had to close for some of its normal hours to allow this, would this be acceptable to you?

- 1 ☐ Yes, completely
- 2 ☐ Yes, to some extent
- 3 ☐ No

J8. Do you need any help understanding Arabic?

- 1 ☐ Yes → Go to J9
- 2 ☐ No → Go to K1

J9. The last time you saw someone from your primary health care centre who did not speak your language, was there someone who could interpret for you?

- 1 ☐ Yes, a relative or friend
- 2 ☐ Yes, someone from the practice/health centre staff
- 3 ☐ No

K. DENTAL CARE

K1. Do you visit a dentist regularly (that is at least once every 2 years)?

- 1 ☐ Yes – at a Primary Health Care centre
- 2 ☐ Yes – privately
- 3 ☐ No
- 4 ☐ Don't know

K2. In the last 24 months, have you visited a dentist at a primary health care centre?

- 1 ☐ Yes
- 2 ☐ No
- 3 ☐ Not sure/ Can't remember

K3. Overall, was the main reason for this visit dealt with satisfactorily?

- 1 ☐ Yes, completely
- 2 ☐ Yes, to some extent
- 3 ☐ No

L. HEALTH PROMOTION

L1. In the last 12 months have you had your blood sugar levels measured by anyone from your primary health care centre?

- 1 ☐ Yes
- 2 ☐ No
- 3 ☐ Not sure/ can't remember

L2. In the last 12 months, have you been given advice from your primary health care centre on your weight?

- 1 ☐ Yes – I was told I should try to lose weight
- 2 ☐ Yes – I was told I should try to stay the same weight
- 3 ☐ Yes – I was told I should try to gain weight
- 4 ☐ No, but I would have liked some advice
- 5 ☐ No, but I did not want any advice

L3. In the last 12 months, have you been given advice or help from your primary health care centre on eating a healthy diet?

- 1 ☐ Yes, definitely
- 2 ☐ Yes, to some extent
- 3 ☐ No, but I would have liked help/advice
- 4 ☐ No, but I did not want any help/advice

P. ABOUT YOU

P1. Are you male or female?

- 1 ☐ Male
- 2 ☐ Female

P2. What was your year of birth?

(Please write in) e.g.

1	9	3	4
---	---	---	---

--	--	--	--

*please write approximate year if not sure.

P3. How old were you when you left full-time education?

- 1 ☐ 16 years or less
- 2 ☐ 17 or 18 years
- 3 ☐ 19 years or over
- 4 ☐ Still in full-time education

P4. What is your current monthly income

- 1 ☐ SAR 3000 or less
- 2 ☐ SAR 3000 to 8000
- 3 ☐ SAR 8000 to 15000
- 4 ☐ Over SAR 15000

P5. Overall, how would you rate your health during the **past 4 weeks**?

- 1 ☐ Excellent
- 2 ☐ Very good
- 3 ☐ Good
- 4 ☐ Fair
- 5 ☐ Poor
- 6 ☐ Very poor

THANK YOU VERY MUCH FOR YOUR HELP

Please check that you answered all the questions that apply to you.

Please post this questionnaire back in the envelope provided, seal it and handover at reception.

استبيان خدمات الرعاية الصحية الأولية

ما هو موضوع الاستبيان؟

يتناول هذا المسح وصف تجربتك مع الخدمات التي تقدمها مراكز الرعاية الصحية الأولية في منطقتكم. إن آرائكم في غاية الأهمية لمساعدتنا على معرفة مدى جودة الخدمات المقدمة وكيف يمكننا تحسينها.

من الذين يطلب منهم إكمال الاستبيان؟

إذا كنت في حاجة إلى المساعدة لاستكمال الاستبيان، فإن الباحث سوف يتولى تقديم المساعدة، ولكن الإجابة على السؤال يجب أن تكون حسب وجهة نظركم.

استكمال الاستبيان

للإجابة على كل سؤال، يرجى وضع علامة بوضوح داخل مربع واحد.

في بعض الأحيان سوف تجد أن المربع الذي وضعت علامة به يحتوي على تعليمات للذهاب إلى سؤال آخر. وتظهر دائماً هذه التعليمات في النص المكتوب باللون الأزرق. من خلال اتباع الإرشادات بدقة، سوف تترك الأسئلة التي لا تنطبق عليك.

لا تقلق إذا قمت بخطأ ما، قم ببساطة بشطب الخطأ ووضع العلامة في المربع الصحيح.

الرجاء أن لا تكتب أسمك أو عنوانك في أي مكان على الاستبيان.

أي أسئلة أو مساعدة؟

إذا كان لديك أي استفسارات حول الاستبيان، من فضلك أسأل الباحث.

شكر و تقدير

تم تبني الأسئلة من هذا الاستبيان من " استبيان الخدمات الصحية المحلية " الإصدار بتاريخ 27 نوفمبر 2007. نحن ممتنين لدعم لجنة جودة الرعاية، المملكة المتحدة لاستخدام الاستبيان.

إن مشاركتكم في هذا المسح تطوعية

إذا اخترت عدم المشاركة في هذا المسح، فإن ذلك لن تؤثر على مستوى الرعاية المقدمة لكم من مركز الرعاية الصحية الأولية بأي شكل من الأشكال، سواء كنت لا ترغب في المشاركة، أو كنت لا ترغب في الإجابة على بعض الأسئلة، فلست مطالباً بتوضيح السبب.

الرمز:

التاريخ:

4. ماذا كان شعورك تجاه طول مدة انتظارك لتحديد موعد مع الطبيب؟

- 1 ☐ عرضت على الطبيب فور إعتقادي بضرورة ذلك.
- 2 ☐ كان من الضروري أن أعرض على الطبيب بأسرع من ذلك بقليل
- 3 ☐ كان من الضروري أن أعرض على الطبيب بأسرع من ذلك بكثير

5. إذا أردت أن تحجز موعد مع الطبيب قبل ثلاث أو أربع أيام مقدماً، هل يسمح لك مركز الرعاية الصحي الأولي بالقيام بذلك؟

- 1 ☐ نعم
- 2 ☐ لا
- 3 ☐ لا أعلم/ غير متأكد

ب. زيارة مركز الرعاية الصحية الأولية

1. هل المسافة من مكان إقامتك مسألة تثقلك عند زيارة مركز الرعاية الصحي الأولي الذي تتبعه؟

- 1 ☐ نعم
- 2 ☐ لا

فكر في زيارتك الأخيرة لمركز الرعاية الصحية الأولية...

2. كم من الوقت الذي كان عليك انتظاره بعد تحديد موعد مع الطبيب؟

- 1 ☐ لم أحدد موعداً
- 2 ☐ عرضت على الطبيب مبكراً أو قبل الموعد
- 3 ☐ انتظرت لما يقارب 15 دقيقة
- 4 ☐ انتظرت من 16-30 دقيقة
- 5 ☐ انتظرت 31 دقيقة أو أكثر
- 6 ☐ لا أستطيع أن أتذكر

أ. تحديد موعد

يرجى عند الإجابة على هذه الأسئلة التفكير في أي رعاية صحية قدمت لك، سواء لنفسك أو لأي طفل تكون مسئولاً عن رعايته.

1. قد حددت موعداً مع الطبيب عن طريق مركز الرعاية الصحي الأولي الذي تتبعه في خلال مدة 12 شهراً الماضية؟

- 1 ☐ نعم [اذهب إلى 2](#)
- 2 ☐ لا [اذهب إلى ب1](#)

فكر في آخر موعد حددته مع الطبيب أو آخر زيارة منزلية...

2. في آخر مرة عرضت على الطبيب في مركز الرعاية الصحي الأولي، ما طول المدة التي انتظرتها لتحديد الموعد؟

- 1 ☐ عرضت على الطبيب بدون تحديد موعد [اذهب إلى 5](#)
- 2 ☐ عرضت على الطبيب في نفس يوم العمل [اذهب إلى 4](#)
- 3 ☐ انتظرت يوم أو يومين عمل [اذهب إلى 3](#)
- 4 ☐ انتظرت أكثر من يومين عمل [اذهب إلى 3](#)
- 5 ☐ كان الموعد أو الزيارة مخطط لها مسبقاً [اذهب إلى 4](#)
- 6 ☐ لا أستطيع أن أتذكر [اذهب إلى 4](#)

3. ما هو السبب الرئيسي لانتظارك؟
(ضع علامة صح على مربع واحد فقط)

- 1 ☐ أردت أن أرى الطبيب الذي اخترته بنفسه
- 2 ☐ لم أستطع الحصول على موعد في وقت سابق مع أي طبيب في المركز الصحي الذي أتبعه
- 3 ☐ لأنه لم يكن ملائماً بالنسبة لي أن يتم تحديد أي وقت آخر قبل ذلك
- 4 ☐ هناك سبب آخر

ج. رؤية الطبيب

فكر في آخر مرة رأيت فيها طبيب المركز الصحي الذي تتبعه ...

1. هل استمع الطبيب إلي ما تقوله بعناية؟

- 1 ☐ نعم بكل تأكيد
2 ☐ نعم إلى حد ما
3 ☐ لا

2. هل أتيح لك الوقت الكافي لمناقشة مشاكلك الصحية أو الطبية مع الطبيب؟

- 1 ☐ نعم بكل تأكيد
2 ☐ نعم إلى حد ما
3 ☐ لا
4 ☐ لم أكن في حاجة إلى مناقشة أي شيء

3. إذا كان لديك أي أسئلة تريد طرحها علي الطبيب، هل حصلت علي الإجابة التي تفهمها؟

- 1 ☐ نعم بكل تأكيد
2 ☐ نعم إلى حد ما
3 ☐ لا
4 ☐ لم أكن في حاجة إلى طرح أي أسئلة
5 ☐ لم يكن لدي الفرصة لطرح أي أسئلة

4. هل شرح الطبيب أسباب أي علاج أو إجراء تم اتخاذه بطريقة يمكنك فهمها؟

- 1 ☐ نعم بكل تأكيد
2 ☐ نعم إلى حد ما
3 ☐ لا
4 ☐ لم أكن في حاجة إلى أي شرح
5 ☐ لم أكن احتاج أي علاج أو اتخاذ إجراء

5. هل قام الطبيب بعلاجك باحترام وكرامة؟

- 1 ☐ نعم، طول الوقت
2 ☐ نعم، بعض الوقت
3 ☐ لا

د. الأدوية (مثل الأقراص، والمراهم وحبوب منع الحمل التي تؤخذ بالفم)

فكر في آخر مرة قدم لك علاج حسب الوصفة الطبية...

1. هل كان يصرف لك أي أدوية حسب الوصفة الطبية لمدة 12 شهر أو أكثر؟

- 1 ☐ نعم
2 ☐ لا

2. هل كان من الواجب عليك أن تدفع ثمن أي أدوية مقررة لك حسب الوصفة الطبية لمدة الـ 12 شهر الأخيرة؟

- 1 ☐ نعم
2 ☐ لا

3. في الـ 12 شهر الأخيرة، هل طلبت أي نصيحة من الصيدلاني بخصوص الأدوية؟

- 1 ☐ نعم [← اذهب إلى د4](#)
2 ☐ لا [← اذهب إلى د5](#)

4. هل كانت نصيحة الصيدلاني مفيدة؟

- 1 ☐ نعم بكل تأكيد
2 ☐ نعم إلى حد ما
3 ☐ لا
4 ☐ غير متأكد

5. في مدة الـ 12 شهر الأخيرة، هل استشرت احد المعالجين التقليديين (الشعبيين) وطلبت منه نصيحة بخصوص أي أدوية؟

- 1 ☐ نعم [← اذهب إلى د6](#)
2 ☐ لا [← اذهب إلى د1](#)

د6. هل كانت نصيحة المعالج التقليدي (الشعبي) مفيدة؟

- ☐ 1 نعم بكل تأكيد
☐ 2 نعم إلى حد ما
☐ 3 لا
☐ 4 غير متأكد

هـ. الاختبارات

هـ1. في مدة الـ 12 شهر الأخيرة، هل أجريت لك أي اختبارات (على سبيل المثال اختبارات الدم، أخذ العينات أو اختبارات يقع الجلد) من قبل أي شخص تابع لمركز الرعاية الصحية الأولية الخاص بك؟

- ☐ 1 نعم ← اذهب إلى هـ2
☐ 2 لا ← اذهب إلى و1
☐ 3 لا أتذكر ← اذهب إلى و1

فكر في أحدث اختبارات أجريت لك...

هـ2. هل حصلت على نتائج الاختبارات في الوقت المحدد؟

- ☐ 1 نعم حصلت عليهم في الوقت المحدد أو مبكراً
☐ 2 لا، حصلت على النتائج في وقت متأخر عما توقعته
☐ 3 ما زلت انتظر النتائج
☐ 4 لم أحصل على النتائج على الإطلاق

هـ3. هل شرح لك أي شخص نتائج الاختبارات بطريقة مفهومة لك؟

- ☐ 1 نعم بكل تأكيد
☐ 2 نعم إلى حد ما
☐ 3 لا
☐ 4 ما زلت انتظر النتائج
☐ 5 غير متأكد / لا أتذكر

و. الإحالة

و1. في مدة الـ 12 شهر الأخيرة، هل أحالك أي شخص في مركز الرعاية الصحية الأولية الذي تتبعه إلي أي أخصائي (مثلاً استشاري في المستشفى)؟

- ☐ 1 نعم
☐ 2 لا

ز. العرض على أخصائي آخر من مركز الرعاية الصحية الأولية الذي تتبعه

ز1. هل تم عرضك على أي أخصائي آخر في مركز الرعاية الصحية الأولية الذي تتبعه في مدة الـ 12 شهر الأخيرة بخلاف الطبيب المعالج لك؟

- ☐ 1 نعم ← اذهب إلى ز2
☐ 2 لا ← اذهب إلى ح1

ز2. في آخر مرة تم عرضك فيها على شخص بخلاف الطبيب في مركز الرعاية الصحية الأولية الذي تتبع له، من كان ذلك الشخص (ضع علامة صح على مربع واحد فقط)

- ☐ 1 ممرض ممارس
☐ 2 قابلة
☐ 3 طبيب أسنان
☐ 4 مثقف صحي
☐ 5 شخص آخر
☐ 6 لم أكن متأكد من الشخص الذي رأيته

ز3. في آخر مرة رأيت هذا الشخص، كم من الزمن انتظرت لتحديد موعد؟

- ☐ 1 تم عرضي بدون تحديد موعد ← اذهب إلى ز6
☐ 2 تم عرضي في نفس يوم العمل ← اذهب إلى ز5
☐ 3 انتظرت لمدة يوم عمل واحد ← اذهب إلى ز4
☐ 4 انتظرت لمدة يومين عمل ← اذهب إلى ز4
☐ 5 انتظرت أكثر من يومين عمل ← اذهب إلى ز4
☐ 6 كنت زيارة أو موعد محدد مسبقاً ← اذهب إلى ز5
☐ 7 لا أستطيع أن أتذكر ← اذهب إلى ز4

ح. التقييم العام للمركز الصحي

1. هل تم التعامل مع السبب الرئيسي الذي ذهبت من أجله إلى مركز الرعاية الصحية الأولية بصورة مرضية؟

- 1 ☐ نعم بكل تأكيد
2 ☐ نعم إلى حد ما
3 ☐ لا

2. في رأيك، ما مدى نظافة مركز الرعاية الصحية الأولية؟

- 1 ☐ نظيف تماماً
2 ☐ نظيف إلى حد ما
3 ☐ غير نظيف تماماً
4 ☐ غير نظيف على الإطلاق
5 ☐ لا أستطيع تكوين رأي

3. ما مدى سهولة تنقلك داخل مركز الرعاية الصحية الأولية؟

- 1 ☐ أمر سهل تماماً
2 ☐ أمر سهل إلى حد ما
3 ☐ غير سهل على الإطلاق
4 ☐ لا أستطيع تكوين رأي

4. في خلال مدة الـ 12 شهر الأخيرة، هل قمت بالتراجع عن الذهاب إلى مركز الرعاية الصحية الأولية الذي تتبعه لعدم ملائمة مواعيد بدء العمل فيه بالنسبة لك؟

- 1 ☐ نعم، كثيراً
2 ☐ نعم، أحياناً
3 ☐ لم يحدث أبداً

4. ماذا كان السبب الرئيسي في انتظارك؟ (ضع علامة صح على مربع واحد فقط)

- 1 ☐ أردت أن أرى الأخصائي الذي اخترته
2 ☐ لم أتمكن من الحصول على موعد مبكر مع أي أخصائي آخر في مركز الرعاية الصحي الأولي الذي أتبعه
3 ☐ لم يكن من المناسب لي أن أحصل على موعد مبكر
4 ☐ سبب آخر

5. ماذا كان شعورك تجاه طول المدة التي كان عليك انتظارها للحصول على موعد للعرض على الأخصائي؟

- 1 ☐ عرضت على الأخصائي فور اعتقادي بضرورة ذلك
2 ☐ كان من الضروري أن أعرض على الأخصائي بأسرع من ذلك بقليل
3 ☐ كان من الضروري أن أعرض على الأخصائي بأسرع من ذلك بكثير

فكر في آخر مرة عرضت على أخصائي آخر بخلاف طبيب مركز الرعاية الصحية الأولية الذي تتبعه ...

6. هل شرح الأخصائي أسباب أي علاج أو إجراء تم اتخاذه بطريقة يمكنك فهمها؟

- 1 ☐ نعم بكل تأكيد
2 ☐ نعم إلى حد ما
3 ☐ لا
4 ☐ لم أكن في حاجة إلى أي شرح
5 ☐ لم أكن احتاج أي علاج أو اتخاذ إجراء

7. هل قام الأخصائي بعلاجك باحترام وكرامة؟

- 1 ☐ نعم، طول الوقت
2 ☐ نعم، بعض الوقت
3 ☐ لا

8. هل كان لديك ثقة في هذا الأخصائي؟

- 1 ☐ نعم بكل تأكيد
2 ☐ نعم إلى حد ما
3 ☐ لا

ج5. إذا أمكن تشغيل مركز الرعاية الصحي الأولي الذي تتبعه في أوقات إضافية، أي من هذه الأوقات تفضل تشغيله فيها؟
(ضع علامة صح على مربع واحد فقط)

- ☐ 1 لا يحتاج إلى ساعات إضافية
☐ 2 الصباح الباكر (قبل الساعة الثامنة)
☐ 3 فترة المساء (بعد الساعة السادسة)
☐ 4 أيام السبت
☐ 5 أيام الجمعة

ج6. إذا أمكن تشغيل مركز الرعاية الصحي الأولي الذي تتبعه في وقت مبكر صباحاً أو متأخر مساءً، كم يوم في الأسبوع تريد أن يتم ذلك؟
☐ 1 يوم واحد أسبوعياً
☐ 2 يومين أو ثلاثة أيام أسبوعياً
☐ 3 أربعة أو خمسة أيام أسبوعياً
☐ 4 لا أدري

ج7. إذا أمكن تشغيل مركز الرعاية الصحي الأولي الذي تتبعه لساعات إضافية، ولكن كان من اللازم أن يغلق لعدة ساعات أو في الساعات المعتادة، هل سيكون ذلك مقبولاً لك؟
☐ 1 نعم بكل تأكيد
☐ 2 نعم إلى حد ما
☐ 3 لا

ج8. هل أنت في حاجة إلى المساعدة في فهم اللغة العربية؟
☐ 1 نعم [← اذهب إلى ج9](#)
☐ 2 لا [← اذهب إلى ج1](#)

ج9. في آخر مرة رأيت فيها شخص في مركز الرعاية الصحي الأولي الذي تتبعه لا يتحدث اللغة العربية، هل كان هناك شخص يمكنه الترجمة لك؟
☐ 1 نعم، قريب أو صديق
☐ 2 نعم، شخص من الممارسين/ من العاملين في المركز الصحي
☐ 3 لا

خ. العناية بالأسنان

خ1. هل تداوم على زيارة طبيب الأسنان (على الأقل مرة واحدة كل عامين)؟
☐ 1 نعم، في أحد مراكز الرعاية الصحية الأولية
☐ 2 نعم، نسبياً
☐ 3 لا
☐ 4 لا أدري

خ2. في آخر 24 شهر، هل قمت بزيارة طبيب الأسنان في مركز الرعاية الصحية الأولية؟
☐ 1 نعم
☐ 2 لا
☐ 3 غير متأكد/ لا أتذكر

خ3. إجمالاً، هل كنت راضياً عن نتيجة التعامل مع سبب هذه الزيارة؟
☐ 1 نعم، تماماً
☐ 2 نعم، إلى حد ما
☐ 3 لا

د. الرعاية الصحية

د1. في آخر 12 شهر، هل قام أي من العاملين في مركز الرعاية الصحي الأولي الذي تتبعه بقياس مستوى السكر في دمك؟
☐ 1 نعم
☐ 2 لا
☐ 3 غير متأكد/ لا أتذكر

د2. في آخر 12 شهر، هل قام أي من العاملين في مركز الرعاية الصحي الأولي الذي تتبعه بتقديم نصيحة لك بخصوص وزنك؟
☐ 1 نعم، قيل لي أنه يجب عليّ أن أخفض وزني
☐ 2 نعم، قيل لي أنه يجب عليّ أن أحافظ على نفس الوزن
☐ 3 نعم، قيل لي أنه يجب عليّ أن أحاول زيادة وزني
☐ 4 لا، ولكنني أريد الحصول على المشورة
☐ 5 لا، ولكنني لم أطلب أي نصح

د3. في آخر 12 شهر، هل قام أي من العاملين في مركز الرعاية الصحي الأولي الذي تتبعه بتقديم النصح أو المساعدة لك بخصوص تناول وجبة صحية؟

1 ☐ نعم، بكل تأكيد

2 ☐ نعم، إلي حدا ما

3 ☐ لا، ولكنني أريد الحصول على المشورة

4 ☐ لا، ولكنني لم أطلب أي نصح/ مساعدة

س. معلومات عنك

س1. هل أنت ذكر أم أنثى

1 ☐ ذكر

2 ☐ أنثى

س2. ما هي سنة ميلادك؟

(يرجى الكتابة في المربعات) على سبيل المثال:

1	9	3	4
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* يرجى كتابة العام أو العمر بالتقريب إذا لم تكن متأكداً

س3. كم كان عمرك عندما أكملت التعليم النظامي؟

1 ☐ 16 عام أو أقل

2 ☐ 17 أو 18 عام

3 ☐ 19 عام أو أكثر

4 ☐ مازلت متفرغاً للتعليم

س4. ما هو دخلك الشهري حالياً؟

1 ☐ 3000 ريال سعودي أو أقل

2 ☐ من 3000 إلى 8000 ريال سعودي

3 ☐ من 8000 إلى 15000 ريال سعودي

4 ☐ أكثر من 15000 ريال سعودي

س5. إجمالاً، ما رأيك في صحتك على مدار الأربعة أسابيع الماضية؟

1 ☐ ممتازة

2 ☐ جيدة جداً

3 ☐ جيدة

4 ☐ متوسطة

5 ☐ سيئة

6 ☐ سيئة للغاية

نتقدم إليكم بوافر الشكر على عونكم الكريم
الرجاء التأكد من إجابة كافة أسئلة الاستبيان التي تنطبق عليكم
يرجى تسليم هذا الاستبيان للإستقبال

Appendix 11 Number of sections and questions adapted

Detail of the original questionnaire sections and number of questions compares to the adapted one.

Original Questionnaire Sections	Number of Questions	Adapted Questionnaire Sections	Number of Questions
A - Making an appointment	6 questions	A - Making an appointment	5 questions
B - Visiting the GP practice/ health centre	6 questions	B - Visiting the primary health care centre	2 questions
C - Seeing a doctor	11 questions	C - Seeing a doctor	5 questions
D - Medicines (e.g. tablets, ointment, oral contraceptives)	9 questions	D - Medicines (e.g. tablets, ointment, oral contraceptives)	6 questions
E – Tests	6 questions	E - Tests	3 questions
F – Referrals	9 questions	F - Referrals	1 questions
G - Seeing another professional from a GP practice/ health centre	9 questions	G - Seeing another professional from this primary health care centre	8 questions
H - Out-of-hours care	7 questions	-----	
J - Overall about your GP practice/ health centre	11 questions	J - Overall about your health centre	9 questions
K - Dental care	11 questions	K - Dental care	3 questions
L - Health promotion	17 questions	L - Health promotion	3 questions
M - Other health services	5 questions	-----	
N - Other issues	6 questions	-----	
P - About you	7 questions	P - About you	5 questions
Q - Other comments	3 questions	-----	

Appendix 12 MOH policy maker and service provider informed consent sheet



Informed Consent Sheet



إستمارة الموافقة المستنيرة

You are invited to participate in the research below, please read the following information carefully and sign below in case you agree to participate in the research.

Research title:

Access and utilisation of primary health care services in Riyadh province.

Researcher name, workplace and position:

Ghadah Ahmad Alfaqeh, Ministry of Health, Public Health Specialist.

Definition of research:

We are carrying out a PhD study to examine the access and utilisation of primary health care services in Riyadh province. The research will take place in primary health care centres in ten governorates of Riyadh province. We want to know about the barriers and facilitators that affect your decisions to access and use primary health care services.

Currently there is very little information available on this subject. By identifying the issues affecting the access and utilisation of primary health care services this research will make a significant contribution towards informing policies and practices that will facilitate better primary health care services for Saudi Arabia.

Participant's role in the research:

If you agree to take part, a researcher (who speaks your language) will contact you to ask you for a mutually convenient and where she/he can come and talk to you. An interview will take place at your chosen location. The interview will be tape recorded to ensure that we do not miss anything important that you say. The interview will usually take about one hour.

أنت مدعو للمشاركة في البحث أدناه، يرجى قراءة المعلومات التالية بدقة وتأمين التوقيع أدناه في حالة الموافقة على المشاركة في البحث.

عنوان البحث:

الوصول والاستفادة من خدمات الرعاية الصحية الأولية في منطقة الرياض.

إسم الباحث الرئيس ومكان العمل والكادر الوظيفي:

غاده أحمد الفقيه، وزارة الصحة، أخصائي صحة عامة.

التعريف بالبحث: (موجز أهدافه و أهميته)

نحن نجري بحث الدكتوراه لدراسة الوصول والاستفادة من خدمات الرعاية الصحية الأولية في منطقة الرياض. البحث سوف يجري في مراكز الرعاية الصحية في عشرة محافظات في منطقة الرياض و نريد ان نعرف عن العوائق و التسهيلات التي تؤثر على قراراتك للوصول إلى واستخدام خدمات الرعاية الصحية الأولية.

حاليا هناك القليل جدا من المعلومات المتاحة حول هذا الموضوع. من خلال تحديد القضايا التي تؤثر على الوصول والاستفادة من خدمات الرعاية الصحية الأولية هذا البحث سوف يسهم إسهاما كبيرا نحو إعلام السياسات والممارسات التي من شأنها تسهيل خدمات الرعاية الصحية الأولية أفضل للمملكة العربية السعودية.

دور المشارك في البحث: (وتوضح بها كيفية

مشاركته في هذا البحث من حيث بيانات)

إذا كنت توافق على المشاركة، فإن الباحث (الذي يتكلم لغتك) سوف يتصل بك ليسألك عن وقت مناسب للطرفين لإجراء المقابلة. سوف تجرى المقابلة في المكان الذي تختاره. وسوف تسجل المقابلة لكي لا يغيب عنا أي شيء مهم تقوله. المقابلة عادة تستغرق حوالي ساعة واحدة.

**Advantage of the research:
(participant's right to know the results of
the research)**

We will provide summaries of the research findings in the form of a poster which will be displayed in all participating primary health care centers. The findings from the research will also be fed back to the Ministry of Health, Saudi Arabia to inform policy and practice and published in academic journals.

Risks expected to occur:

There is no risk associated with this research. Participating in this research study will not affect your service rights and quality.

Confidentiality of information:

All the information you share with us will be treated in the strictest confidence and none of your details will be shared with anyone other than the research team.

Participation/withdraw from the research:

It is up to you to decide whether or not you want to take part. If you decide to take part you will be given this information sheet to keep and asked to sign it. If you decide to take part you are still free to withdraw at any time and without a reason.

Financial cost:

Participation in this research does not cause any financial costs or physical burdens.

**The length of time expected to participate
in the research.**

One hour one to one interview.

**فوائد البحث :
(وحق المشارك في معرفة نتائج البحث)**

سوف نقدم ملخصات لنتائج البحث في شكل ملصق والتي سوف يتم عرضها في جميع مراكز الرعاية الصحية الأولية المشاركة. كما سيتم تغذية النتائج المستخلصة من البحث مرة أخرى إلى وزارة الصحة، المملكة العربية السعودية لإبلاغ السياسات والممارسات ونشرها في المجالات الأكاديمية.

المخاطر المتوقعة حدوثها:

لا يوجد أي خطر يرتبط بهذا البحث. مشاركتك في هذه الدراسة البحثية لن يؤثر على حقك في الحصول على الخدمة والجودة.

سرية المعلومات: يضمن الباحثون سرية المعلومات التي يتم الحصول عليها من المشارك في هذا البحث وأن هذه المعلومات لن تستخدم إلا في الأغراض البحثية والإحصائية فقط.

سيتم التعامل مع كافة المعلومات التي تزودنا بها في سرية تامة وأياً من التفاصيل الخاصة بك لن يطلع عليها أحد من خارج الفريق البحثي.

الانسحاب من البحث: المشاركة في هذا البحث اختيارية. ويمكن قبول المشاركة أو الانسحاب من البحث بعد المشاركة دون أن يؤثر ذلك على نوع أو كفاءة الخدمة الصحية التي يتم تقديمها له.

الأمر متروك لك لتقرر ما إذا تريد أو لا تريد أن تأخذ دور في المشاركة. إذا قررت المشاركة سوف نعطيك ورقة المعلومات هذه ونطلب منك التوقيع عليها. إذا قررت المشاركة فأنت لا تزال حر في الانسحاب في أي وقت وبدون سبب.

التكاليف المادية : لن يترتب على مشاركة الفرد في هذا البحث أي تكاليف أو أعباء مادية. المشاركة في هذا البحث لا يسبب أي تكاليف أو أعباء مادية.

المدة الزمنية المتوقعة للمشاركة في البحث:
مقابلته منفردة لمدة ساعة.

Inquiries: if you have any questions please contact:

Researcher

Name: Ghadah Ahmad Alfaqeeh.

Mobile: 00966505424291

Email: Ghadah.Alfaqeeh@beds.ac.uk

Supervisor

Name: Dr.Nasreen Ali

Mobile: 00447969062428

Email: Nasreen.Ali@beds.ac.uk

I agree to participate in the research:

Name of the participant or guardian

Signature

Date

Researcher Name

Signature

Date

الاستفسارات : في حاله وجود أي استفسار يمكن الإتصال بـ :

الباحث

الأسم: غاده أحمد الفقيه

الجوال: 00966505424291

البريد الإلكتروني:

Ghadah.Alfaqeeh@beds.ac.uk

المشرف

الأسم: د/ نسرين علي

الجوال: 00447969062428

البريد الإلكتروني:

Nasreen.Ali@beds.ac.uk

أوافق على المشاركة في البحث:

إسم المشارك أو ولي الأمر

عيقوتلا

التاريخ

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إسم الباحث الرئيس

عيقوتلا

التاريخ

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Appendix 13 Patient informed consent sheet



Informed Consent Sheet



إستمارة الموافقة المستنيرة

You are invited to participate in the research below, please read the following information carefully and sign below in case you agree to participate in the research.

Research title:

Access and utilisation of primary health care services in Riyadh province.

Researcher name, workplace and position:

Ghadah Ahmad Alfaqeeh, Ministry of Health, Public Health Specialist.

Definition of research:

We are carrying out a PhD study to examine the access and utilisation of primary health care services in Riyadh province. The research will take place in primary health care centres in ten governorates of Riyadh province. We want to know about the barriers and facilitators that affect your decisions to access and use primary health care services.

Currently there is very little information available on this subject. By identifying the issues affecting the access and utilisation of primary health care services this research will make a significant contribution towards informing policies and practices that will facilitate better primary health care services for Saudi Arabia.

Participant's role in the research:

If you agree to take part, a researcher (who speaks your language) will give you a questionnaire to complete. If you need any help in responding to the questions, the researcher will help you. The questionnaire will usually take about 20 minutes to complete.

أنت مدعو للمشاركة في البحث أدناه، يرجى قراءة المعلومات التالية بدقة وتوقيع أدناه في حالة الموافقة على المشاركة في البحث.

عنوان البحث:

الوصول والاستفادة من خدمات الرعاية الصحية الأولية في منطقة الرياض.

إسم الباحث الرئيس ومكان العمل والكادر الوظيفي:
غاده أحمد الفقيه، وزارة الصحة، أخصائي صحة عامة.

التعريف بالبحث: (موجز أهدافه وأهميته)

نحن نجري بحث الدكتوراه لدراسة الوصول والاستفادة من خدمات الرعاية الصحية الأولية في منطقة الرياض. البحث سوف يجري في مراكز الرعاية الصحية في عشرة محافظات في منطقة الرياض و نريد ان نعرف عن العوائق والتسهيلات التي تؤثر على قراراتك للوصول إلى واستخدام خدمات الرعاية الصحية الأولية.

حاليا هناك القليل جدا من المعلومات المتاحة حول هذا الموضوع. من خلال تحديد القضايا التي تؤثر على الوصول والاستفادة من خدمات الرعاية الصحية الأولية هذا البحث سوف يسهم إسهاما كبيرا نحو إعلام السياسات والممارسات التي من شأنها تسهيل خدمات الرعاية الصحية الأولية أفضل للمملكة العربية السعودية.

دور المشارك في البحث: (وتوضح بها كيفية

مشاركته في هذا البحث من حيث بيانات)

إذا كنت توافق على المشاركة، فإن الباحث (الذي يتكلم لغتك) سوف يعطيك استبيان لإكماله. إذا كنت بحاجة إلى أي مساعدة في الإجابة على الأسئلة فإن الباحث سوف يساعدك. الاستبيان عادة يستغرق حوالي 20 دقيقة لإكماله.

**Advantage of the research:
(participant's right to know the results of
the research)**

We will provide summaries of the research findings in the form of a poster which will be displayed in all participating primary health care centers. The findings from the research will also be fed back to the Ministry of Health, Saudi Arabia to inform policy and practice and published in academic journals.

Risks expected to occur:

There is no risk associated with this research. Participating in this research study will not affect your service rights and quality.

Confidentiality of information:

All the information you share with us will be treated in the strictest confidence and none of your details will be shared with anyone other than the research team.

Participation/withdraw from the research:

It is up to you to decide whether or not you want to take part. If you decide to take part you will be given this information sheet to keep and asked to sign it. If you decide to take part you are still free to withdraw at any time and without a reason.

Financial cost:

Participation in this research does not cause any financial costs or physical burdens.

**The length of time expected to participate
in the research.**

The questionnaire will usually take about 20 minutes to complete.

**فوائد البحث :
(وحق المشارك في معرفة نتائج البحث)**

سوف نقدم ملخصات لنتائج البحث في شكل ملصق والتي سوف يتم عرضها في جميع مراكز الرعاية الصحية الأولية المشاركة. كما سيتم تغذية النتائج المستخلصة من البحث مرة أخرى إلى وزارة الصحة، المملكة العربية السعودية لإبلاغ السياسات والممارسات ونشرها في المجالات الأكاديمية.

المخاطر المتوقعة حدوثها:

لا يوجد أي خطر يرتبط بهذا البحث. مشاركتك في هذه الدراسة البحثية لن يؤثر على حقك في الحصول على الخدمة والجودة.

سرية المعلومات: يضمن الباحثون سرية المعلومات التي يتم الحصول عليها من المشارك في هذا البحث وأن هذه المعلومات لن تستخدم إلا في الأغراض البحثية والإحصائية فقط.

سيتم التعامل مع كافة المعلومات التي تزودنا بها في سرية تامة وأياً من التفاصيل الخاصة بك لن يطلع عليها أحد من خارج الفريق البحثي.

الانسحاب من البحث: المشاركة في هذا البحث اختيارية. ويمكن قبول المشاركة أو الانسحاب من البحث بعد المشاركة دون أن يؤثر ذلك على نوع أو كفاءة الخدمة الصحية التي يتم تقديمها له.

الأمر متروك لك لتقرر ما إذا تريد أو لا تريد أن تأخذ دور في المشاركة. إذا قررت المشاركة سوف نعطيك ورقة المعلومات هذه ونطلب منك التوقيع عليها. إذا قررت المشاركة فأنت لا تزال حر في الانسحاب في أي وقت وبدون سبب.

التكاليف المادية : لن يترتب على مشاركة الفرد في هذا البحث أي تكاليف أو أعباء مادية. المشاركة في هذا البحث لا يسبب أي تكاليف أو أعباء مادية.

المدة الزمنية المتوقعة للمشاركة في البحث : الاستبيان عادة يستغرق حوالي 20 دقيقة لإكماله.

Inquiries: if you have any questions please contact:

Researcher

Name: Ghadah Ahmad Alfaqeeh.

Mobile: 00966505424291

Email: Ghadah.Alfaqeeh@beds.ac.uk

Supervisor

Name: Dr.Nasreen Ali

Mobile: 00447969062428

Email: Nasreen.Ali@beds.ac.uk

I agree to participate in the research:

Name of the participant or guardian

Signature

Date

Researcher Name

Signature

Date

الاستفسارات : في حاله وجود أي استفسار يمكن الإتصال بـ :

الباحث

الأسم: غاده أحمد الفقيه

الجوال: 00966505424291

البريد الإلكتروني:

Ghadah.Alfaqeeh@beds.ac.uk

المشرف

الأسم: د/ نسرين علي

الجوال: 00447969062428

البريد الإلكتروني:

Nasreen.Ali@beds.ac.uk

أوافق على المشاركة في البحث:

إسم المشارك أو ولي الأمر

عيقوتلا

التاريخ

14- / / هـ

إسم الباحث الرئيس

عيقوتلا

التاريخ

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Appendix 14 Follow-up questionnaire

Schedule of questionnaire follow-ups carried out from January to March 2014

Governate/ Region	Primary Health care (name)	January 2014				February 2014				March 2014			
Rural		Weeks				Weeks				Weeks			
		1	2	3	4	1	2	3	4	1	2	3	4
Al-Saleel	I	PA	PA	PA	PA	PA	QC 77						
Al-Aflaj	H	PNA	PNA	PNA	PNA	PNA	PNA	PNA	PNA	PNC	PNA	PNA	PNA
Al-Hareeq	F	PA	PA	PA	FWA1	PA	QC 40	PEF	PEF	PEF	PEF	PEF	PEF
Wadi Al-Dawaser	G	PA	PA	PA	PA	PA	QC 77						
Rammah	C	PA	PA	PA	PA	QC 77							
Urban													
Dharma	A	PA	PA	PA	PA	PA	QC 77						
Al-Zulfi	E	PNA	PNA	PNA	PNA	PNA	PNA	PNA	PNA	PNC	PNA	PNA	PNA
Al-Deriyya	B	PA	PA	PA	PA	PA	PA	PA	MTQC 53	PNA	MS2	WFT	WFT
Al-Riyadh	D	PA	PA	PA	MS1	MS3	MG	FWN1	PNA	SAF	FWN2 QC 7	PNA	PNA
Al-Kharj	J	PNA	PNA	PNA	PNA	PNA	PNA	PNA	PNA	PNA	PNA	PNA	PNA

Key

PA= Phone call answered

PNA= Phone call was not answered

FWD= Manager asks to call the centre land phone and follow up with Dr.Ezat

MG= Manager said I don't know how many questionnaires was collected and give me the nurse mobile number (Abdullah Alahmari) to follow up with him.

FWN1= Nurse says it's difficult to fill this questionnaire, most of the patient refused.

FWN2= Nurse answer and he says only 7 questionnaire collected and sorry we can't collect more, the patient they are not cooperative.

MS1= Manager answer and says the patients are not cooperative to fill the questionnaires.

MS2= Manager answer and says they are so busy and once the questionnaire completed, he will text me again.

MS3= Manager says the patients either took the questionnaire and not bring it back or they refuse to fill it.

QC= Questionnaire completed up to 77 only

PNC= Phone numbers were clarified by the ministry of health and its correct, still no answer.

PEF= Phone call end with fax tone.

MTQC= Manager text me with the collected questionnaires number was collected (53 questionnaire)

WFT= Waiting for the manager text.

SAF= Sent assistant to follow up, no further questionnaires.

Appendix 15 UOB ethical approval



08 August 2013

Ghadah Alfaqeeh
Student number: 1023810

Dear Ghadah Alfaqeeh

Re: IHREC Application No: IHREC244

Project Title: Access and utilisation of primary health care services in Riyadh province, Saudia Arabia

The Ethics Committee of the Institute for Health Research has considered your application and has decided that the proposed research project should be approved.

Please note that if it becomes necessary to make any substantive change to the research design, the sampling approach or the data collection methods a further application will be required.

Yours sincerely

PP

Dr Yannis Pappas
Head of PhD School, Institute for Health Research
Chair of Institute for Health Research Ethics Committee

Appendix 16 MOH ethical approval

المملكة العربية السعودية
Kingdom Of Saudi Arabia
وزارة الصحة
Ministry of Health
الإدارة العامة للبحوث والدراسات

وزارة الصحة
Ministry of Health

وكيل الوزارة للتخطيط واقتصاديات الصحة
التاريخ: ١٤٣٦/١١/١٢
المرقعات: ٣٢ لفة
06-1-393636-14-2

المشروعات:

الموضوع: بحث الطالبة/غادة الفقيه

سعادة / مدير عام الشؤون الصحية بمنطقة الرياض
السلام عليكم ورحمة الله وبركاته....

إشارة إلى موضوع الطالبة / غادة أحمد الفقيه ، لدراسة الدكتوراة في تخصص الصحة العامة بكلية
معهد البحوث الصحية جامعة بدفوردشير المملكة المتحدة ، رقم السجل المدني (٧-٩٠٠٣-١٠٣٩٥) ،
والرقم الأكاديمي: (١٠٢٣٨١٠) وعنوان الرسالة :
" الوصول والاستفادة من خدمات الرعاية الصحية الأولية في منطقة الرياض".
"Access and utilisation of primary health care services in Riyadh province."

نحيطكم علماً بأن المذكورة قد إستوفت كافة المستندات المطلوبة وتمت مراجعتها من قبل اللجان المعنية
(مرفق صورة)، وتمت الموافقة على تسهيل مهمة إجراء هذا البحث، وحيث أن المذكورة عالية ستنفذ
دراساتها في مراكز الرعاية الصحية الأولية ومكاتب وزارة الصحة بالرياض.
نأمل التفضل بالإطلاع والإيعاز لمن يلزم بتسهيل مهمتها لجمع البيانات اللازمة بما يضمن أن لا يكون
هناك أي تأثير على خدمة المراجعين خلال قيامها بمهام بحثها، مع العلم بأن وزارة الصحة لا تتحمل أية
أعباء مالية أو إدارية في البحث.

ولكم أطيب تحياتي ،،،

مرفق صورة من خطة الدراسة،،،

مدير عام
الإدارة العامة للبحوث والدراسات

٢٧٧٥ ص.ب الرياض : ١١٤٧٣٥٠٣٩ فاكس : ١١٤٧٣٥٠٣٨ هاتف :
e-mail: research@moh.gov.sa
الرمز البريدي: ١١١٧٦

Appendix 17 Quantitative correlation tables

Table 1 Correlation between the responses of study subjects towards visiting their PHCCs and region

Visiting the PHCC	Region		X ² -value	p-value
	Rural	Urban		
<u>B1. Is the distance from your residence an issue in visiting your primary health care centre?</u>				
Yes	123(65.8)	64(34.2)	32.87	<0.0001
No	317(42.4)	431(57.6)		

Table 2 Correlation between the responses towards medicines and referrals at their PHCCs and their age groups

	Age groups			X ² -value	p-value
	<=30	31 to 50	> 50		
Medicines					
<u>D1. Have you been taking any prescribed medicines for 12 month or longer?</u>					
Yes	102(23.3)	223(50.9)	113(25.8)	15.41	<0.0001
No	272(54.7)	217(43.7)	8(1.6)		
<u>D2. Did you have to pay for any prescribed medicines for last 12 months?</u>					
Yes	7(18.9)	16(43.2)	14(37.8)	22.85	<0.0001
No	367(40.9)	424(47.2)	107(11.9)		
<u>D3. In the last 12 months, have you asked a pharmacist for any advice on medicines?</u>					
Yes	25(24)	50(48.1)	29(27.9)	27.67	<0.0001
No	349(42)	390(46.9)	92(11.1)		
<u>D5. In the last 12 months, have you asked a traditional healer for any advice on medicines?</u>					
Yes	6(6.9)	40(46)	41(47.1)	112.93	<0.0001
No	368(43.4)	400(47.2)	80(9.4)		
Referral					
<u>F1. In the last 12 months, has anyone at your primary health care centre referred you to a specialist (e.g. hospital consultant?)</u>					
Yes	181(33.8)	263(49.2)	91(17)	29.06	<0.0001
No	193(48.3)	177(44.3)	30(7.5)		

Table 3 Correlation between the responses towards Medicines at their PHCCs and their monthly income

Medicines	Monthly Income			X ² -value	p-value
	≤3000	3000 to 8000	8000 to 15000		
<u>D1. Have you been taking any prescribed medicines for 12 month or longer?</u>					
Yes	165(37.7)	249(56.8)	24(5.5)	17.85	<0.0001
No	255(51.3)	217(43.7)	25(5)		

Table 4 Correlation between the responses towards Tests at their PHCCs and their region

Tests	Region		X ² -value	p-value
	Urban	Rural		
<u>E1. In the last 12 months, have you had any tests (e.g.blood tests, swabs, smear tests) carried out by anyone from your primary health care centre?</u>				
Yes	131(52.4)	119(47.6)	64.69	<0.0001
No	41(26.1)	116(73.9)		
Can't remember	4(30.8)	9(69.2)		
Not available	319(61.9)	196(38.1)		

Table 5 Correlation between the responses towards overall about their PCCCs and age groups

Overall about their health centres	Age groups			X ² -value	p-value
	<=30	31 to 50	> 50		
<u>J4. In the last 12 months, have you ever been put off going to your primary health care centre because the opening times are inconvenient for you?</u> Yes, often Yes, sometimes No	34(53.1) 127(50) 213(34.5)	26(40.4) 98(38.6) 316(51.2)	4(6.3) 29(11.4) 88(14.3)	23.94	<0.0001
<u>J6. If your primary health care centre were to be open either earlier in the morning or later in evening, how many days a week would you want this to happen?</u> One day per week Two or three days per week Four or five days per week Don't know NA	134(46.2) 118(43.4) 35(40.2) 86(30.5) 1(25)	135(46.6) 127(46.7) 44(50.6) 131(46.5) 3(75)	21(7.2) 27(9.9) 8(9.2) 65(23) 0	44.02	<0.0001

Table 6 Correlation between the responses towards overall about their PHCCs and region

Overall about their health centres	Region		X ² - value	p-value
	Urban	Rural		
<u>J2. In your opinion, how clean is the primary health care centre?</u>				
Very clean	339(58)	245(42)	42.43	<0.0001
Fairly clean	153(49.4)	157(50.6)		
Not very clean	3(11.1)	24(88.9)		
Not at all clean	0	12(100)		
Can't say	0	2(100)		
<u>J5.If it were possible for your primary health care centre to open at additional times, which of these times would you most like it to be open?</u>				
No extra hours	210(47.3)	234(52.7)	28.75	<0.0001
Early mornings (before 8 am)	10(47.6)	11(52.4)		
Evenings (after 6 pm)	187(64.5)	103(35.7)		
Saturdays	84(48.3)	90(51.7)		
Fridays	0	2(100)		
NA	4(100)	0		

Table 7 Correlation between the responses towards dental care and health promotion at their PHCCs and age groups

	Age groups			X ² -value	p-value
	<=30	31 to 50	>50		
Dental care					
<u>K1. Do you visit a dentist regularly (that is at least once every 2 years)?</u>					
Yes- at a primarily health care centre	133(48.5)	127(46.4)	14(5.1)	52.19	<0.0001
Yes-privately	53(33.8)	72(45.9)	32(20.4)		
No	14(24.6)	24(42.1)	19(33.3)		
Don't know	1(20)	2(40)	2(40)		
NA	173(39.1)	215(48.6)	54(12.2)		
<u>K2. In the last 24 months, have you visited a dentist at a primary health care centre?</u>					
Yes	160(45)	170(45.6)	35(9.4)	31.91	<0.0001
No	27(25.7)	48(45.7)	30(28.6)		
Not sure/Can't remember	6(40)	7(46.7)	2(13.3)		
NA	173(39.1)	215(48.6)	54(12.2)		
Health promotion					
<u>L1. In the last 12 months have you had your blood sugar levels measured by anyone from your primary health care centre?</u>					
Yes	181(29.6)	313(51.2)	117(19.1)	107.48	<0.0001
No	190(59.9)	123(38.8)	4(1.3)		
Not sure/can't remember	3(42.9)	4(571.1)	0		
<u>L2. In the last 12 months, have you been given advice from your primary health care centre on your weight?</u>					
Yes- I was told I should try to lose weight	153(33.5)	228(49.9)	76(16.6)	72.60	<0.0001
Yes- I was told I should try to stay the same weight	48(29.6)	83(51.2)	31(19.1)		
Yes-I was told I should try to gain weight	37(71.2)	12(23.1)	3(5.8)		
No, but I would have liked some advice	61(47.3)	67(51.9)	1(0.8)		
No, but I did not want any advice	75(55.6)	50(37)	10(7.4)		
<u>L3. In the last 12 months, have you been given advice or help from your primary health care centre on eating a healthy diet?</u>					
Yes, definitely	105(31.3)	170(50.6)	61(18.2)	30.38	<0.0001
Yes, to some extent	76(40.6)	88(47.1)	23(12.3)		
No, but I would have liked help/advice	93(41.9)	108(48.4)	22(9.9)		
No, but I did not want any help/advice	100(52.9)	74(39.2)	15(7.9)		

Table 8 Correlation between the responses towards dental care and health promotion at their PHCCs and gender

	Gender		X ² -value	p-value
	Male	Female		
Dental care				
<u>K3. Overall, was the main reason for this visit dealt with satisfactorily?</u>				
Yes, completely	93(34.2)	179(65.8)	17.97	<0.0001
Yes, to some extent	65(42.5)	88(57.5)		
No	25(36.8)	43(63.2)		
NA	220(49.8)	222(50.2)		
Health promotion				
<u>L3. In the last 12 months, have you been given advice or help from your primary health care centre on eating a healthy diet?</u>				
Yes, definitely	113(33.6)	223(66.4)	32.47	<0.0001
Yes, to some extent	71(38)	116(62)		
No, but I would have liked help/advice	124(55.6)	99(44.4)		
No, but I did not want any help/advice	95(50.3)	94(49.7)		

Table 9 Correlation between the responses towards dental care health promotion at their PHCCs and monthly Income

	Monthly Income			X ² -value	p-value
	<=3000	3000 to 8000	8000 to 15000		
Dental care					
<u>K1. Do you visit a dentist regularly (that is at least once every 2 years)?</u>					
Yes- at a primarily health care centre	119(43.4)	133(48.6)	22(8)	30.12	<0.0001
Yes-privately	62(39.5)	81(51.6)	14(8.9)		
No	17(29.8)	36(63.2)	4(7)		
Don't know	3(60)	1(20)	1(20)		
NA	219(49.5)	215(48.7)	8(1.8)		
<u>K2. In the last 24 months, have you visited a dentist at a primary health care centre?</u>					
Yes	165(44.2)	181(48.5)	27(72)	33.41	<0.0001
No	32(30.5)	60(57.1)	13(12.4)		
Not sure/Can't remember	4(26.7)	10(66.7)	1(6.7)		
NA	219(49.5)	215(48.6)	8(1.8)		
<u>K3. Overall, was the main reason for this visit dealt with satisfactorily?</u>					
Yes, completely	121(44.5)	132(48.5)	19(7)	28.40	<0.0001
Yes, to some extent	55(35.9)	84(54.9)	14(9.2)		
No	25(36.8)	35(51.5)	8(11.8)		
NA	219(49.5)	215(48.6)	8(1.8)		
Health promotion					
<u>L1. In the last 12 months have you had your blood sugar levels measured by anyone from your primary health care centre?</u>					
Yes	235(38.5)	339(55.5)	37(6.1)	30.55	<0.0001
No	180(56.8)	125(39.4)	12(3.8)		
Not sure/can't remember	5(71.4)	2(28.6)	0		
<u>L2. In the last 12 months, have you been given advice from your primary health care centre on your weight?</u>					
Yes- I was told I should try to lose weight	187(40.9)	249(54.5)	21(4.6)	36.46	<0.0001
Yes- I was told I should try to stay the same weight	64(39.5)	87(53.7)	11(6.8)		
Yes-I was told I should try to gain weight	41(78.8)	11(21.2)	0		
No, but I would have liked some advice	56(43.4)	65(50.4)	8(6.2)		
No, but I did not want any advice	72(53.3)	54(40)	9(6.7)		

Table 10 Correlation between the responses towards dental care and health promotion at their PHCCs and region

	Region		X ² -value	p-value
	Rural	Urban		
Dental care <u>K3. Overall, was the main reason for this visit dealt with satisfactorily?</u> Yes, completely Yes, to some extent No NA	109(40.1) 94(61.4) 41(60.3) 196(44.3)	163(59.6) 59(38.6) 27(39.7) 246(55.7)	7.96	<0.0001
Health promotion <u>L3. In the last 12 months, have you been given advice or help from your primary health care centre on eating a healthy diet?</u> Yes, definitely Yes, to some extent No, but I would have liked help/advice No, but I did not want any help/advice	143(42.6) 94(50.3) 131(58.7) 72(38.1)	193(57.4) 93(49.7) 92(41.3) 117(61.9)	21.82	<0.0001

Appendix 18 Number of patients accessing PHCCs

Number of men and women yearly accessing the selected PHCCs

PHCC name	Governorate/areas	Total number of patient visit last year	Female %	Male %
Urban				
A	Dharma	11825	64	36
B	Al-Deriyya	7540	35	65
D	Al-Riyadh	-----	-----	-----
E	Al-Zulfi	17745	55	45
J	Al-Kharj	18460	67	33
Rural				
C	Rammah	8548	52	48
F	Al-Hareeq	9748	68	32
G	Wadi Al-Dawaser	10560	70	30
H	Al-Aflaj	-----	-----	-----
I	Al-Saleel	22145	60	40